The Builder

A JOURNAL FOR THE

Architect, Engineer, Operative & Artist.

VOL. XVIII.—No. 896. APRIL 7, 1860. PRICE FOURPENCE. *Stamped, 5d.*

ILLUSTRATIONS.

London of the Past: A Shop in Clare Market 209
Section of the Parthenon 213
Selected Design for Bishop Auckland Town Hall, Assembly Rooms, and Market.—Mr. J. P. Jones, Architect 217

CONTENTS.

London of the Past 209
Modernism in Art 210
Was the Ceiling of the Parthenon flat or curved? 213
Copper and its Relations 214
Architectural Competitions and Speculative Building: their Evils and Remedies 215
The Serpentine Blunder 216
Architectural Institute of Scotland 216
Bishop Auckland Town Hall, Assembly Rooms, and Markets 216
The Union of Architecture and Sculpture 219
The Ornamental Sculptor, his Patrons, and the Public 220
City of Ely Waterworks 220
Competitions 220
A Foreign Competition 220
Masters and Workmen 220
School-building News 220
Provincial News 221
Cast-Steel Bells 221
Artists' General Benevolent Institution 221
The late Mr. Robert Stephenson and the Newcastle High-level Bridge 221
Church-building News 222
The Painter-Stainers' Company and Decorators 222
Decisions under the Metropolitan Building Act, 1855: "Necessary Repairs" 222
The Stone of the New Houses of Parliament 223
Books received: Longman's Lectures on History of England (Longman & Co.); Morris's House for Suburbs (Simpkin & Co 3
Variorum 3
Miscellanea 3

ARCHITECTS' BENEVOLENT SOCIETY.

PATRON—Sir Robert Smirke, R.A.
PRESIDENT—Sydney Smirke, Esq. A.R.A.
TRUSTEES.
Sir Charles Barry, R.A. | Charles Robert Cockerell, Esq. R.A.
Philip Hardwick, Esq. R.A.
TREASURER—William Tite, Esq. F.R.S. M.P.

The List of Subscribers and Annual Report may be obtained of the Hon. Secretary. Subscriptions will be received by WILLIAM TITE, Esq. St. Helen's-place, the Treasurer; or by Mr. GOULD, the Collector, 52, Great Ormond-street, W.C.

J. TURNER, Hon. Secretary, 15, Wilton-street.

ARCHITECTURAL ASSOCIATION,

9, CONDUIT-STREET, W.—The CONVERSAZIONE of the 13th instant is POSTPONED. The adjourned DISCUSSION on Mr. C. F. HAYWARD'S Paper, "Modernism in Art," will be held on that evening.

B. A. C. HERRING, A. GRAHAM, } Hon. Secs.

SCIENCE INSTRUCTION.—A COURSE

of LECTURES, addressed principally to teachers, on the best methods of acquiring and communicating knowledge in the following branches of Science, in which certificates are given under the Science Minute of the 2nd June, 1859, by the Science and Art Department, will be delivered at the SOUTH KENSINGTON MUSEUM, on the following MONDAY evenings:—

Lecture I.—Practical Plane and Descriptive Geometry, and their application to Mechanical and Machine Drawing, and Practical Architecture. Professor T. BRADLEY, April 16.

Lecture II.—Mechanical Physics. Rev. B. M. COWIE, M.A. April 23.

Lecture III.—Experimental Physics. Professor TYNDALL, F.R.S. April 30.

Lecture IV.—Geology and Mineralogy. Professor W. W. SMYTH, F.R.S. May 7.

Lecture V.—Zoology. Professor HUXLEY, F.R.S. May 14.

Lecture VI.—Botany. Dr. LANKESTER, M.D. F.R.S. May 21.

The lecture-theatre will hold 450 persons. 300 seats will be reserved exclusively for schoolmasters, schoolmistresses, pupil-teachers, &c.; who, upon registering their names, will obtain tickets at 6d. each for the whole course. Tickets for the remaining 150 seats will be issued at 5s. each for the course, or 1s. each lecture, when there may be room in the theatre.—Tickets may be obtained at the Museum and Offices; and of Messrs. CHAPMAN & HALL, 193, Piccadilly.

By order of the Committee of Council on Education.

EASTER HOLIDAYS.—The SOUTH

KENSINGTON MUSEUM, with the Pictures presented by Mr. Sheepshanks, the Pictures of the National Gallery, British School (by authority of the director and trustees), and the Art Schools for Male Students, will be OPEN FREE, every MORNING and EVENING, from the 9th to the 14th of APRIL, inclusive. Hours, daytime, from TEN till FIVE. Evening, from SEVEN till TEN.—By order of the Committee of Council on Education.

CRYSTAL PALACE.—EASTER

HOLIDAYS.—The Palace and Park will OPEN at NINE A.M. on EASTER MONDAY and TUESDAY, from which hour trains will leave London-bridge and Pimlico in rapid succession, calling at intermediate stations as often as necessary. The arrangements will comprise a Vocal and Instrumental Concert, in which Mdlle. Piccolomini will sing some of her most popular songs; Mr. Patey, and other Artistes will also take part in it. The Orchestral Band of the Company will be strengthened for the occasion, and perform at intervals. Performances on the Great Festival Organ during the day. The Picture Gallery will re-open on Easter Monday. The whole series of Cotton Machinery will recommence working, together with the Printing Machines, Furnace Blasts, Centrifugal Pumps, and other mechanical illustrations in the Machinery Department. In the grounds, the Out-door Amusements will commence for the season, comprising boating on the lakes, archery, cricket, rifle-practice, quoits, bowls, &c. The flowers in the Palace are now in great profusion and beauty. Admission, One Shilling; Children under Twelve, Sixpence.

THE NEW HORTICULTURAL GARDEN.

Persons wishing to have SPECIMENS of their WORKS placed for EXHIBITION in the NEW GARDEN at KENSINGTON GORE should now forward particulars of the class of articles they wish to exhibit, and the space required, in order that the Council of the Horticultural Society may decide whether the articles proposed to be exhibited will be appropriate to the Garden, and whether space can be found.

No space will be allotted to articles which it is proposed to remove at the end of a few months.

No charge will be made for space.

The name of the exhibitor will be affixed to each article.

Space will probably be found for objects in Cements, such as Edgings, Balustrades, Vases, Statues. In Terra Cotta, such as ornaments for Spandrils, Edgings, Balustrades, Vases. In Bronze and Iron, such as Vases, Statues, Seats, Trellis-work. In Stone and Marble, such as Statues, Vases, Edgings, for fountains; coloured varieties for pavements. In China, such as Vases, Jardinières. Encaustic Tiles. Slates of large size and peculiar quality for greenhouse walks.

Proprietors who may wish to exhibit specimens of their quarries will be able to exhibit them in the shape of pedestals, &c.

Letters to be addressed to the Assistant-Secretary, Horticultural Society, 8, St. Martin's-place, London, W.C.

COMPETITIONS.

DESIGNS for NEW HOUSES of PARLIAMENT, with PUBLIC OFFICES attached, to be erected in Sydney, New South Wales.—The Architects of Great Britain and Ireland and of France are invited to compete for the intended edifice: 600*l.* will be awarded for the approved design, and 300*l.* for the second best design. The style of architecture will be left to the discretion of the competitor. The drawings and estimates will be required to be sent under sealed covers addressed to the Secretary of Public Works, Sydney, to be care of Messrs. WILLIAM L. MERRY & CO. 3c, Cannon-street, London, E.C. (the Commercial Agents of the New South Wales Government) by the 1st JANUARY, 1861, for transmission to the colony by the steamer of that month.—General conditions together with the [illegible] plan, to be had of Mr. WEALE, 59, High Holborn; and of ALEXANDER HILL, Edinburgh; Mr. H. CAMPBELL, Argyle-street, Glasgow; Messrs. HODGES & SMITH, Dublin; Messrs. PHILIP & SON, Liverpool; Messrs. THOMSON, Manchester; where also photographic views of the locality may be seen. Mr. WEALE will give such explanation as may be required of him by personal application or by post.

TO ARCHITECTS and BUILDERS.—

The Committee of the Blackburn Exchange hereby offers THREE PREMIUMS, viz. one premium of 50*l.*, one premium of 30*l.*, and one premium of 20*l.*, to be paid in the order of merit, for DESIGNS, with plans, specification, and estimates, for a BUILDING, to contain a large Room for Exchange purposes, a News-room, Committee and other rooms, for the transaction of business. The premium designs, &c. to become the property of the Committee. The Exchange will be erected opposite the Town-hall. A ground plan and further particulars may be obtained on payment of 2s. 6d. on application to Messrs. HOPWOOD & GARSDEN, Surveyors, Blackburn, on and after the 2nd of APRIL. Designs, with a motto and the name and address (under seal) of the competitor submitting the design, endorsed "Designs for Blackburn Exchange," must be addressed, on or before the 2nd of JUNE next, to T. CROOKE AINSWORTH, Secretary, Town-hall-buildings, Blackburn.

29th March, 1860.

CONTRACTS.

LONDON DISTRICT.—WAR DEPARTMENT.—TRIENNIAL CONTRACTS for WORKS and REPAIRS.—The Commanding Royal Engineer, London District, hereby gives notice, that sealed TENDERS will be received at the War Office, Pall-mall, addressed to the Director-General of Contracts, on or before the 19th APRIL, 1860, for WORKS and REPAIRS at all Barracks and other buildings in the occupation of the War Department in his charge, within five miles or the Commanding Royal Engineer's Office, 11, James-street, Buckingham-gate, S.W. including the Turnham-green Militia Barrack, from 3rd MAY, 1860, to 31st MARCH, 1862. Schedules and printed forms of Tender, price 6s. and all necessary information, may be obtained, on application, at 11, James-street, Buckingham-gate, S.W. from MONDAY, 9th APRIL, to WEDNESDAY, 18th APRIL, inclusive, between the hours of ELEVEN and THREE. The Secretary of State for War reserves to himself the right of rejecting the whole or any of the Tenders.

Royal Engineers' Offices, 11, James-street, S.W.
29th March, 1860.

BRISTOL LOCAL BOARD of HEALTH.

To BUILDERS, CONTRACTORS, and OTHERS.—The Local Board of Health of the City and County of Bristol hereby give notice that they intend to CONTRACT for LAYING DOWN, CONSTRUCTING, and completely FINISHING, certain intended BRICK SEWERS, in the St. Philip's Sewer District, within the District of the said Board, about 3,674 yards in length. Persons wishing to Contract for the same are requested to deliver in their Tenders at the Offices of the said Local Board of Health, No. 13, Prince-street, on or before THURSDAY MORNING, the 12th day of APRIL next, at TEN o'clock, on which day the Committee will meet to determine upon the same. The plans and specifications of the works to be done may be seen at the Offices of the Local Board of Health, and any further information may be obtained either on personal application, or by letter, prepaid, addressed to the Surveyor, Mr. FREDERICK ASHMEAD, C.E. The party contracting will be required to give sufficient security, to be approved by the Local Board of Health, for the due performance of the Contract. The Local Board will not hold themselves bound to accept the lowest or any Tender.—By order of the Committee,

JOHN G. HEAVEN, Clerk.

Local Board of Health Offices, 13, Prince-street,
15th March, 1860.

TO BUILDERS, &c.—TENDERS are required for adding a new NORTH AISLE and sundry other works to the CHURCH of FARNCOMBE, near Godalming, Surrey. Drawings and specification may be seen at the School House. Tenders to be sent to Mr. GEORGE GILBERT SCOTT, Architect, 20, Spring-gardens, on or before the 16th instant.

CONTRACTS.

TO BUILDERS and OTHERS.—The Commissioners of Sewers of the City of London hereby give Notice that they will meet in the GUILDHALL of the said City on TUESDAY, the 17th of APRIL next, at ONE o'clock p.m. precisely, to receive TENDERS for the CONSTRUCTION of NEW SEWERS in Devonshire-street and Cavendish-court, and WORKS in connection therewith, agreeably to plans and specifications to be seen at this Office. Security will be required from the Contractor for the due execution of his Contract. The Commissioners do not pledge themselves to accept the lowest Tender, or any, unless deemed advantageous; and no Tender will be received after ONE o'clock on the day of treaty.

JOSEPH DAW, Principal Clerk.

Sewers Office, Guildhall, 29th March, 1860.

CROYDON.—Builders desirous of TENDERING for the ERECTION of a PAIR of SEMI-DETACHED VILLAS can see the drawings and specification, and obtain bills of quantities, at my Offices, after THURSDAY, the 12th day of APRIL next. Tenders to be delivered at or before TWELVE o'clock on WEDNESDAY, the 18th APRIL. The Proprietor does not bind himself to accept the lowest or any Tender.

JOHN BERNEY, Architect.

61, North-end, Croydon, March 29, 1860.

PADDINGTON.—To SEWER CONTRACTORS and OTHERS.—The Burial Board for the Parish of Paddington hereby give notice that they are ready to receive TENDERS from parties willing to CONTRACT for the RE-LAYING of about 1,000 feet run of STONEWARE PIPE at the Paddington Cemetery, Willesden-lane. The Tenders to be sent, sealed and directed, to the Burial Board, and left at the Vestry-hall, Harrow-road, on or before the 12th APRIL; and persons sending Tenders are requested to be in attendance on the following morning, at HALF-PAST NINE o'clock precisely.—Specification, plan, and section, may be seen, and all particulars obtained, from Mr. MERRY, Surveyor, at the Vestry-hall aforesaid, between the hours of TEN and TWELVE, a.m. The Board do not bind themselves to accept the lowest or any Tender.—By order,

April 5th, 1860. R. FORD, Clerk to the Board.

NEW CONGREGATIONAL CHURCH and SCHOOLS, Chorlton-road, Manchester.—Builders willing to CONTRACT for the above BUILDINGS, may see the conditions, plans, and specifications, by application at the Vestry, Iron Church, Sloane-street, near Brook's-bar, Manchester, on and after TUESDAY, the 17th day of APRIL next, between the hours of TEN a.m. and FOUR p.m. Tenders (sealed and addressed to the Building Committee) to be delivered to the Honorary Secretary, HENRY DUNNILL, Esq 5, Bond-street, Manchester, not later than THURSDAY, the 26th day of APRIL next, at TWO o'clock, p.m. The lowest or any of the Tenders will not necessarily be accepted. Information can also be obtained by application to the Architects, who have prepared bills of quantities. POULTON & WOODMAN, Architects, Reading.

March 24th, 1860.

DORSET COUNTY LUNATIC ASYLUM.—To BUILDERS.—Persons willing to CONTRACT for sundry WORKS proposed to be done in ERECTING a PAUPER LUNATIC ASYLUM for the County of Dorset, on a plot of ground selected for the purpose, and situate about a mile on the Dorchester side of the present Asylum at Forston, and about three miles from Dorchester, on the line of road from Dorchester to Cerne or Sherborne, are required to send in TENDERS, sealed up and endorsed "Tender for County Lunatic Asylum," to the Chairman of the Visitors, under cover to the Clerk, Mr. JOHN BROWN, Dorchester, on or before WEDNESDAY, the 9th day of MAY next, after which time no Tender will be received. The works to be done under the direction of the Committee of Visitors and their architect, agreeably to plans, specifications, and conditions, which may be inspected at the Office of the Architect, Mr. H. E. KENDALL, jun. 33, Brunswick square, London, and also at Forston House, near Dorchester, on any day after the 18th day of APRIL instant, between the hours of TEN, a.m. and SIX, p.m. The Committee will not be pledged to accept the lowest or any Tender, and the Contractor will be required to enter into a contract, and to give a bond, with sufficient security, to be approved by the Committee, in the sum of 4,000*l.* for the due performance of the contract. The quantities can be obtained from Mr. THOMAS PERCY, of No. 1, Alfred-place, Bedford-square, London, Surveyor, and the usual charges of such Surveyor are to be paid by the Contractor whose Tender may be accepted.—By order of the Committee of Visitors,

(Signed) JOHN BROWN, Clerk.

Dorchester, 3rd April, 1860.

TO BUILDERS.—CAMBRIDGE RIFLE CLUB.—Persons desirous of TENDERING for the ERECTION of a MAGAZINE on the Rifle Ground in the Mill-road, Cambridge, may inspect the plans and specification at the Office of Mr. WALTER ROBINSON, Architect, 18, Rose-crescent, Cambridge, on the 9th APRIL, between ELEVEN and THREE o'clock, p.m. Also for an ARMOURY and TWO COTTAGES, on the 16th of APRIL, between ELEVEN and THREE o'clock. Tenders to be sent in for the Magazine on the 11th APRIL, and for the Armoury and Cottages on the 21st APRIL, before SIX o'clock, p.m. addressed to Mr. A. D. CLAYDEN, 3, Bridge-street, Cambridge.—The Committee do not bind themselves to accept the lowest or any Tender.

COLSTON'S HOSPITAL.—To BUILDERS.—The Trustees of Colston's Hospital are desirous of receiving TENDERS for the whole of the WORKS required in making certain ALTERATIONS and ADDITIONS to COLSTON'S HOSPITAL, at Stapleton, near Bristol. The drawings and specifications, with form of contract, may be seen at the Offices of the Architects, Messrs. FOSTERS & WOOD, 6, Park-street, Bristol, between the hours of TEN and FIVE o'clock from the 26th instant, till the 14th APRIL next, on or before which latter day the Tenders must be sent, under seal, in the form furnished by the architects, to the Office of the Treasurer to the Society of Merchant Venturers, Merchants'-hall, Bristol. The Trustees do not pledge themselves to accept the lowest or any other Tender. Printed copies of the specifications and contract may be obtained of the Architects on payment of 2s. 6d. each copy also printed forms of Tender. WILLIAM CLAXTON, Treasurer.

Merchants'-hall, Bristol, March, 1860.

[For remainder of Contracts see next page.

CONTRACTS.

TO BUILDERS.—ENLARGEMENT of the HOLY TRINITY CHURCH, Bracknell.—TENDERS (in sealed envelopes, directed to Mr. ROBERT ROGERS, Churchwarden, Bracknell) for this ENLARGEMENT, will be received by the Committee up to the 20th day of APRIL, 1860, and will be opened by them on that day, at THREE o'clock p.m. The Committee do not pledge themselves to accept the lowest Tender. A plan and specification of the work can be seen either at the Office of H. E. COE, Esq. Architect, 21, Montague-street, Russell-square, London; or of Mr. ROBERT ROGERS, Auctioneer and Estate Agent, Bracknell.

PARISH of ST. MARY ABBOTS, Kensington, in the County of Middlesex.—PAVING CONTRACT.—The Paving, Lighting, Cleansing, and Watering Committee of the Vestry of the Parish aforesaid, will meet at the Vestry Hall, High-street, Kensington, on FRIDAY, the 13th day of APRIL instant, at SEVEN o'clock in the evening, to receive TENDERS to CONTRACT for new YORKSHIRE PAVING GRANITE KERB, and CHANNELS and DRESSED GRANITE, and other KERBINGS, &c. Also, for RE-LAYING old KERB PAVING and CHANNELS, for one year from Lady-day, 1860. Forms of Tender may be obtained at the Clerk's Office, Vestry Hall, at which place the Tenders, sealed up and endorsed, "Tenders for Masons and Paviors' Work," are to be deposited on or before FOUR o'clock in the afternoon of the day aforesaid. The Vestry do not bind themselves to accept the lowest or any Tender. The Contractor or Contractors will be required to enter into a written contract and bond, at his or their own cost or expense.—By order,
REUBEN GREEN, Clerk of the Vestry.
Kensington, April 3, 1860.

TO BUILDERS.—Persons desirous of CONTRACTING for the ERECTION of FIVE RESIDENCES (in one block) on the Crabtree Close, Coventry, can obtain further information by applying at my Offices, Coventry, or 4, Agar-street, Strand, London. JAMES MURRAY, Architect.
Coventry, April 4, 1860.

BUILDERS desirous of TENDERING for a HOUSE and OFFICES, to be erected for John Calcutt, Esq. at North Hyde, within half a mile of Southall Station, on the Great Western Railway, can inspect the drawings and specification at my Office, on and after the 7th of APRIL, where Tenders are to be sent by the 19th APRIL. No Tender will be received after FOUR o'clock on that day. The proprietor reserves the right of rejecting the lowest or any Tender. The Architect will be in attendance at North Hyde, with the drawings and specification, on the 9th and 10th APRIL, from NINE till HALF-PAST TWO o'clock each day, to point out the site and other particulars. HENRY McCALLA, Architect.
Office, 25, Westbourne-place, Eaton-square, S.W.

TO BUILDERS.—Parties desirous of TENDERING for the ERECTION of a PAIR of SEMI-DETACHED VILLAS, to be built at Basingstoke (for the Basingstoke and Eastrop Building Company, Limited), may see the plans and specification at the Office of the said Company, Basingstoke, Hants, or of Mr. E. GREENWAY, Architect, 16, Walbrook, London. Tenders to be endorsed and addressed to the Secretary of the Company on or before the 24th inst.—The Company do not bind themselves to accept the lowest or any Tender.

NEW WESLEYAN CHAPEL, Pooley's-park, City-road, Manchester.—TENDERS are required for the ERECTION of the above. The drawings may be seen, and blank bill quantities, and form of Tender obtained (for which a charge of half a guinea will be made), at my Office, on WEDNESDAY, THURSDAY, and FRIDAY, APRIL the 11th, 12th, and 13th; and at Manchester, on MONDAY, TUESDAY, and WEDNESDAY, APRIL the 16th, 17th, and 18th, on application to Mr. THOMAS SHAWCROSS, No. 8, Bond-street.—Sealed Tenders, addressed "Rev. James Carr, No. 13, Dawson-street, Manchester," on or before TUESDAY, the 1st day of MAY, and to be endorsed "Tender for Hulme Chapel." The Trustees will not bind themselves to accept the lowest or any Tender. The party whose Tender is accepted will be required to enter into a bond, with two approved sureties, for the due performance of the contract. The quantities will be immediately forwarded to any one applying by letter, and enclosing a remittance to me.
E. BASSETT KEELING, A.I.B.A. Architect.
3, Upper-terrace, Islington, London, N.

MARLOW BRIDGE, in the Counties of Bucks and Berks.—To BUILDERS, IRONFOUNDERS, and OTHERS.—Notice is hereby given that any person desirous of CONTRACTING for the REPAIRS required to be done to the IRON SUSPENSION BRIDGE crossing the Thames at Great Marlow, in the counties of Bucks and Berks, is requested to deliver a TENDER, in writing, for the same, sealed up and addressed to me, at my Office, in Aylesbury, on or before MONDAY, the 23rd day of APRIL next. Each Tender must be divided into parts, namely, one price for providing, fixing, &c. of the wrought-iron lattice girders and all ironwork, and the other a price for supplying the new woodwork and removing the old roadway, and renewing the same, as well as the handrails, including fixing, painting, &c. Plans and specifications of the works may be seen at my Office, and also at the Office of Messrs. EASTON, AMOS, & SONS, of the Grove, Southwark, from whom all information may be obtained. Each party contracting will be required to enter into a contract and bond, with two sufficient sureties, for the due performance of his contract, and to set forth in his Tender the names and description of such sureties.
ACTON TINDAL, Clerk of the Peace for Bucks.
County Hall, Aylesbury, 30th March, 1860.

BERMONDSEY, SURREY.—To DUST CONTRACTORS, BRICKMAKERS, FARMERS, and OTHERS. The Vestry of the Parish of Bermondsey, Surrey, will meet at the Workhouse, in Russell-street, on MONDAY, the 7th day of MAY next, at SIX o'clock in the evening precisely, to receive TENDERS from persons willing to PURCHASE all the DUST, ASHES, CLINKERS, RUBBISH, HOUSE, GARDEN, and other REFUSE, which may be collected from the manufactories and houses in the said parish, from the 8th day of MAY next to the 24th day of JUNE, 1861. The dust and refuse will be collected by the Vestry, and delivered in the state it is collected to the purchaser, at any place of deposit to be named by him, within three-quarters of a mile of the boundary of any part of the parish. The dust and refuse will be required to be paid for monthly within seven days after the delivery of each monthly account. A deposit equal to the value of 500 loads will be required to be made by the person whose Tender may be accepted, such deposit to remain in the hands of the Vestry during the term of the Contract, as a security for the due performance thereof; and on the due performance of the Contract to be retained by the Vestry in part payment of the last monthly instalment. The certificate of the Surveyor as to the number of loads delivered shall be binding on the contractor. The Vestry do not bind themselves to accept the highest or any Tender.—Forms of Tenders may be obtained at the Vestry Office, in Maltby-street.
April, 1860. G. H. DREW, Clerk to the Vestry.

TO GAS COMPANIES, CONTRACTORS, and OTHERS.—The Vestry of the Parish of Bermondsey, Surrey, are desirous of treating with any person or persons willing to SUPPLY the PUBLIC LAMPS, in their district, with GAS, or other equally powerful ILLUMINATING MATERIAL, for a period of three, five, seven, ten, or fourteen years, from Midsummer, 1861.—The number of public lamps at present lighted is 614, but as a large portion of the parish is being laid out for building purposes, that number will be increased materially. If Gas be supplied, it is to be pure carburetted hydrogen, free from sulphur and ammonia. The contractor will have to provide and maintain all lamp-posts, brackets, lanthorns, and other necessary fittings which may be required during the term.—Further information may be obtained upon application at the Vestry-office, in Maltby-street, Bermondsey, prior to the 7th of MAY next, when the Vestry will meet to consider Tenders or applications.
3rd April, 1860. GEO. H. DREW, Clerk.

BASINGSTOKE and EASTROP BUILDING COMPANY, LIMITED.—TENDERS are required for the ERECTION of a VILLA RESIDENCE, for this Company, at Basingstoke.—The plans and specification may be seen on and after WEDNESDAY, 11th inst. at the Office of the Architect, Mr. G. B. MUSSELLWHITE, Basing-toke. Tenders to be sent in to W. CHALLIS, Esq. Solicitor, Basing toke, on or before 24th inst. The lowest or any Tender will not be necessarily accepted. Quantities will be supplied by the Architect.

TO BUILDERS.—COUNTY of SUSSEX. Persons desirous of TENDERING for the ERECTION of NEW POLICE STATIONS, at Hailsham and East Grinstead, can inspect the plans and specifications, on and after TUESDAY, the 10th inst. at Superintendent FLANIGAN'S, Hailsham, and Police Constable LILLY'S, East Grinstead, who will shew the sites for new buildings. Any other information can be obtained of Mr. H. CARD, North-street, Lewes.—Sealed Tenders to be delivered to the Clerk of the Peace, County-hall, Lewes, on or before the 30th inst. endorsed "Tender for Hailsham, or East Grinstead." The magistrates do not bind themselves to accept the lowest or any other Tender.
April 6, 1860.

TO BUILDERS.—Persons desirous of CONTRACTING for the RE-SEATING of the PARISH CHURCH, Hemel Hempstead, are informed that the plans and specification may be seen by application to the Churchwardens of that parish on and after the 7th APRIL, and that Tenders for the work are to be delivered at the Vicarage, Hemel Hempstead, on or before APRIL 26th, at TEN, a.m. The Committee do not bind themselves to accept the lowest Tender.

TO BUILDERS.—Parties willing to TENDER for the ERECTION of EIGHT VILLAS, in the neighbourhood of Bath, may see the drawings and specifications at my Offices, 1, Belmont, Bath.—Tenders to be sent in to my Offices, on WEDNESDAY, the 25th instant.—Neither the lowest nor any other tender will necessarily be accepted.
April 4th, 1860. JAMES WILSON, Architect.

TO DRAIN-PIPE LAYERS and OTHERS. WANTED, TENDERS for DRAINING the proposed Burial Ground for the Parish of Battersea, situate adjoining Battersea Common. The Burial Board do not bind themselves to accept the lowest or any Tender.—For particulars apply to Mr. LEE, Architect, of 20, Golden-square, Westminster.

TO BUILDERS.—The Battersea Burial Board are desirous to receive TENDERS for the ERECTION of TWO CHAPELS, LODGE, &c. on the proposed Burial Ground, situate adjoining Battersea-common. The Board do not bind themselves to accept the lowest or any Tender.—For particulars, apply to Mr. LEE, Architect, of 20, Golden-square, Westminster.

OLD LEAD.—BARNSTAPLE WATER COMPANY.—The Directors of this Company offer for SALE, by TENDER, in lots, about FORTY-FIVE TONS of LEAD PIPES, and TWELVE BRASS COCKS, of 4 inches and 3 inches diameter. Tenders to be received on the 17th APRIL next.—Particulars and forms of Tender may be had, on applying to R. HEARD, Secretary, Quay, Barnstaple.—March 14, 1860.

TO BUILDERS.—Builders desirous of TENDERING for the ERECTION of the NEW CHURCH of ENGLAND FREE SCHOOL and TEACHER'S RESIDENCE at Kingsclere, Hants, may see the drawings and specification at the Old School at Kingsclere, on and after MONDAY, the 16th instant. Tenders to be delivered at the Office of the Architect, Mr JOHN COLSON, St. Swithin-street, Winchester, on or before MONDAY, the 23rd instant, endorsed "Tender for Kingsclere School." The right of rejecting the whole or any of the Tenders is reserved.
April 7th, 1860.

MANCHESTER ASSIZE COURTS. Persons desirous of TENDERING for the ERECTION of the whole of the above BUILDINGS (with the exceptions of the foundations already executed) can inspect the plans and specifications, and obtain printed bills of quantities, at the Office of Mr. THOMAS TAYLOR, Surveyor, No. 102, Cross-street, Manchester, on and after the 1st of MAY next. Tenders, under seal, to be sent to Mr. F. C. HUTTON, Clerk to the Manchester Assize Courts Committee, 37, New Bailey-street, Salford, on or before the 14th of MAY next. The Magistrates reserve to themselves the right of rejecting the whole or any of the Tenders, and do not pledge themselves to accept the lowest.
ALFRED WATERHOUSE, Architect.
Cross-street-chambers, Manchester, April 3, 1860.

WOOLWICH LOCAL BOARD of HEALTH.—To DUST CONTRACTORS and OTHERS.—The Local Board of Health for the District of Woolwich, in the County of Kent, do hereby give notice that a MEETING will be holden at the TOWN-HALL, on TUESDAY Evening, the 24th APRIL, at SEVEN o'clock, to receive TENDERS in writing from such persons as may be willing, in accordance with the regulations prescribed by the bye-laws, to CONTRACT for the Daily COLLECTION and REMOVAL of all DUST, ASHES, RUBBISH, FILTH, DUNG, SOIL, MANURE (except stable produce), and all ANIMAL and VEGETABLE MATTERS, that may accrue on the premises of the inhabitants within the aforesaid district (or separately for South or North Woolwich), for a period of Twelve Months from the 1st day of MAY next. The dust, ashes, &c. to be collected at the expense of the contractor, and conveyed beyond the parish boundaries. Persons tendering, or some one on their behalf are required to be in attendance, and the party whose offer is accepted to enter into a bond for the due performance of the contract. The contractor to pay one moiety thereof on signing the bond, and the other moiety within six months from that date. The Board do not bind themselves to accept either the highest or lowest Tender.—Further particulars may be known on application at the Office of the Surveyor to the Local Board, William-street, daily, from TEN a.m. to FOUR p.m.—By order of the said Local Board, EDWARD SARGENT, Clerk.
1, George-street, Woolwich, 31st March 1860.

WANTED, TENDERS for about 50 tons of best 5-inch ABERDEEN or GUERNSEY PAVING; also 1,000 feet run of 8 by 12-inch CORNISH GRANITE CURB, of sound quality and good workmanship; rejecting all that does not hold the full size, or is less than 40 inches in length. Also sound coping 2 feet deep and 2 feet 3 inches wide, scabbled to shape with true beds and ends, and rounded edges. Prices to be F. O. B. the Trustees' Barge in the Thames.—Address, offers before the 18th instant, to Mr. BEARDMORE, 30, Great George-street, Westminster.

I. J. BOWEN, PEWTERER.
BEER and SPIRIT MACHINE MANUFACTORY.
BARS FITTED on the MOST APPROVED PRINCIPLES.
Illustrated Catalogues on application at
136, GREAT DOVER-STREET, BOROUGH, S.E.
Estimates given, drawings furnished, and the Trade supplied.

PATENT CAST-STEEL BELLS, singly and in Peals, for CHURCHES and CHAPELS, Schools, Ships, Manufactories, &c. &c. TONE EQUAL to BRONZE, at ONE THIRD the PRICE. For price, specifications of Peals, references, &c. apply to
NAYLOR, VICKERS, & CO. SHEFFIELD, the sole Manufacturers.
A sample Peal of Eight Bells at the Works.

NAILS and IRONMONGERY, from BIRMINGHAM direct.
Builders, Contractors, and Others, supplied with Nails, Iron, and Ironmongery, of every description, at the LOWEST BIRMINGHAM PRICES.
A complete List of which will be forwarded upon application to
FRANCIS BIANCHI (late Blyth & Bianchi),
Nail Manufacturer and General Factor, BIRMINGHAM; and 16, Gresham-street, London, E.C.

WILLIAM PHILLIPS,
LONDON
CONSIGNEE OF THE EARL OF DUDLEY'S COAL AND IRON,
25, COAL EXCHANGE, CITY.

NOW OPEN, YOUNG'S IRONMONGERY WAREHOUSE.
No. 2½, Davies-street, Three Doors from Oxford-street,
For the supply of Builders, Carpenters, Upholsterers, Smiths, Bell-hangers, and the Trade in general, at wholesale prices. In connection with his Old Establishment, No. 18, Blandford-street, Manchester-square, running out of Baker-street, Portman-square, London, W.

LOSH, WILSON, & BELL,
NEWCASTLE-ON-TYNE,
Manufacturers of Bar Iron, Railway Bars, Forge and Engine Work, Cast-iron Goods, and
STEWARTS PATENT CAST-IRON GAS and WATER PIPES.
Office, No. 7, Size-lane, London.

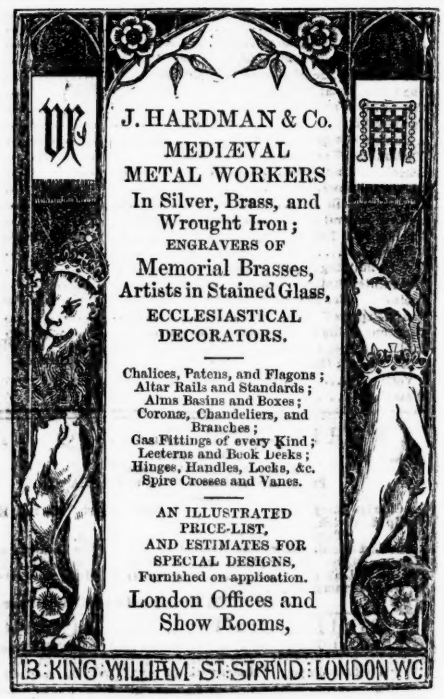
RAILINGS, PATENT WROUGHT-IRON TUBULAR, CHEAPER than CAST.
Wrought-Iron Girders, and every kind of Ornamental or Constructive Iron-Work, Designed, Estimated, and Executed.

H. G. COOMBS,
IRONFOUNDER, &c. 17, UNION-STREET, BOROUGH, LONDON.
Eight doors from Borough.

TO IRONMONGERS, BUILDERS, &c.
PATENT WROUGHT-IRON WELDED TUBE for GAS; Galvanized ditto, for Water; High Pressure Cocks, &c. Manufacturers of Dr. Arnott's Improved Ventilators.
HULETT & CO. 55, High Holborn.

TO IRONMONGERS AND THE TRADE GENERALLY.
D. HULETT & CO. Manufacturers of GAS CHANDELIERS, HALL LANTERNS, GLASS LUSTRES, &c. &c. A large assortment of the newest designs always on show, every article marked in plain figures. Patentees and Manufacturers of the Mercurial Gas Regulator. Complete Pattern-book and Price-lists, 12s. Nos. 55 and 56, High Holborn.

SAVING IN GAS.
D. HULETT, INVENTOR and PATENTEE. The Mercurial Gas Regulator is the only efficient instrument for insuring wholesome and uniform lighting, equalizing the pressure, and preventing any irregularity in the height of the flame.
D. HULETT & CO. 55, High Holborn, London,
Manufacturers of Gas Chandeliers, Glass Lustres, &c. &c.



IRONMONGERY.
SPECIAL CASH PRICES FOR LONDON, DELIVERED FREE.
Best Cut Clasp and Rose Nails.

1½ in.	1¾ in.	2 in.	2½ in.	3 in. and upwards
14s. 6d.	14s. 6d.	13s. 6d.	12s. 6d.	11s. 6d. per cwt.

Best Sheet Floor Brads, 11s. 6d. per cwt.
Best Cut Lath Nails, 14s. per cwt.
6-inch Iron Rim Locks, with brass furniture, 15s. per dozen and upwards.
Fine Plate Locks.

6 inch.	7 inch.	8 inch.	9 inch.
7s. 6d.	8s. 6d.	9s. 6d.	11s. per dozen.

6-inch Solid Ward Mortise Locks, with brass furniture and patent spindles, 30s. per dozen.

Norfolk Latches	No. 1.	No. 2.	No. 3.	No. 4.
	1s. 9d.	2s. 3d.	2s. 9d.	3s. per dozen.
Cast Butt Hinges	2 inch.	2½ inch.	3 inch.	
	9d.	1s. 2d.	1s. 8d. per dozen pairs.	

Tower Bolts.

6 inch.	7 inch.	8 inch.	9 inch.	10 inch.
2s.	2s. 6d.	3s.	3s. 3d.	3s. 6d. per dozen.

Screws, Hinges, Sash Pulleys, and General Builders' Brassfoundery, AT WHOLESALE PRICES.
MAPPLEBECK & LOWE,
MANUFACTURERS, BIRMINGHAM.

IRON CASTINGS of every description; WROUGHT and CAST IRON GIRDERS, FLITCHES, and TANKS; IRON WINDOWS, HOT WATER PIPES, RAIN WATER PIPES and GUTTERS, PIPES for GAS and WATER, manufactured by
JAMES HAYWOOD, Junior, Phœnix Foundry, Derby.

LIGHTNING CONDUCTORS.
R. S. NEWALL & CO. Patentees of the COPPER ROPE LIGHTNING CONDUCTOR, supply the same, with the point and all staples, complete for fixing, at the following prices:—

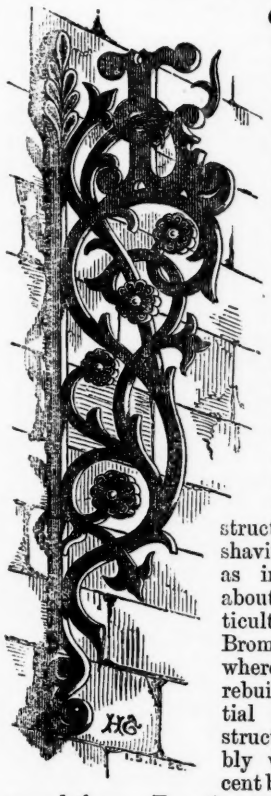
Three-eighths-inch diameter	1s.	0d. per foot.
Half-inch-diameter	1s.	6d. ,,
Five-eighths-inch diameter	2s.	0d. ,,

R. S. Newall & Co.'s Patent Copper Rope Lightning Conductor is being applied by architects, engineers, and scientific men, in all parts of the world.
Offices—Gateshead-on-Tyne.
,, 130, Strand, London.
,, 27, Dale-street, Manchester.
,, Broomielaw, Glasgow.
,, 14, Goree-piazza, Liverpool.
,, Exchange-buildings, Dundee.
,, 7, Frederick-street, Aberdeen.

The Builder.

VOL. XVIII.—No. 896.

London of the Past.



LONDON is changing in a very remarkable manner. In all the older parts rebuilding is actively going on, and in all the outskirts, street upon street, and terrace upon terrace, are springing up, and enlarging its size to an extent that is marvellous if not alarming. In some cases where simply speculation is at work, preparing houses for the market, the commonest type is followed, and the whole construction is cut to a shaving; but in others, as in the new roads about the proposed Horticultural Gardens in Brompton, and mostly where houses are being rebuilt in town, substantial and well-arranged structures contrast forcibly with the less recent buildings remaining around them. To estimate rightly this change and this increase in London, it is desirable occasionally to look back, as we have done on some previous occasions, and to examine the aspect of the metropolis at different periods. We have opened a map, dated 1600, of the neighbourhood on which now stands the British Museum with rows of houses and public buildings. If we compare it with what we know of the district in 1860, we shall see how circumstances have altered. Eastward our map extends to Little Turnstile, on the south side of the country road, marked Holborn. Passing along this road westward, we come to a cross lane which is now represented by King-street, running northward, and another lane (now Little Queen-street), which is met by cross footpaths through the fields, at the corner of Great Queen-street, just where the printing-office of Messrs. Cox & Wyman now stands. Lincoln's-inn-fields are marked, and are crossed by footpaths. The map does not extend so far as the old Inns of Court and Chancery-lane. From Great Queen-street a lane in the map passes across Drury-lane, and continues to St. Martin's-lane: this is the site of Long-acre.

Returning, however, to the Holborn corner of the present King-street, it is seen that no houses had been built in the now great thoroughfare, so far as the map extends, on either side. Except at the bottom extending for a short distance, there are no houses on the east side of Drury-lane, until we reach the part now called the Sand-yard, near Broad-street, St. Giles's. On the opposite side of the lane here, a building or two are marked on the site occupied by the wooden houses that were recently engraved in the *Builder*, and wherein, it is reported, the great plague of 1665 first made its appearance. Lower down are rows of trees, broken here and there by houses: some of these may at the present day be readily distinguished from those of a more modern date. Great changes took place in this direction during the sixty-five years between the time of the publication of the map and the great plague. Lincoln's-inn-fields and Great Queen-street had been squared up, and partly built upon with houses designed by Inigo Jones; and in other directions the brick-makers might be seen at work; and there were notices set up, here and there, of land to let on building leases. Notwithstanding this, drainage was a matter not much considered. Houses were planted in parts here as at Agar-town and Lambeth, to prepare the land for human habitation, as it were; but this process was attended with a fearful loss of life. The dwellers in the new districts fell like those conducting the "forlorn hope" in a siege. Long even after the plague and the Great Fire of London, the vacant spaces here, in the absence of any sufficient police, were the chosen spots for dog-fighting, and other scenes of riot.

South of the present Long-acre is the Convent Garden. The details from this to the Strand are not filled in. Farther west, however, "*The Mews*" is marked, and thence runs a wide road going north to the junction of the Broad-street of St. Giles's, and we see St. Martin's-lane, with hedgerows and trees on each side; the still-called Tottenham-court-road, and the Oxford-road. Passing up St. Martin's-lane we find the Cock and Pie Fields, now covered with the swarming, bustling, and not too fastidious population of the Seven Dials. A road leads along the side of a wall from St. Martin's-lane to Broad-street, St. Giles's. This is marked Le-lane, but became Monmouth-street. Beyond the fence is the picturesque little church, St. Giles's-in-the-fields, with one or two houses close by embedded in trees. Northward the green fields are intersected by several paths, one of which is now represented by a side of Bloomsbury-square. Eastward from St. Giles's, but a little to the west of the present King-street, in the midst of gardens, is Southampton House. From this some of the streets take their name. No houses appear on the site that afterwards became the notorious Rookery and surrounding dens of St. Giles's. Long after this map was made dwellings of a good description were built, and declined into terrible lodgings for human beings. Demolitions and alterations have taken place: model lodging-houses, schools, chapels, and churches have been reared, which form a new stratum in the section of progress. Montague-house is not marked: the wondrous antiquities of Egypt; the rare works of Greek and Roman art; the great rooms filled with miles of books, were not thought of in the days when this map was made: the valuable objects now there were then scattered in all parts of the world.

But for the writings of Fitz-Stephen, patient John Stow, and a few others, the early condition of London would have been a matter of as great obscurity as is that of the lost cities of antiquity. In the "Antiquarian Repertory," a translation is given of a book published in Paris, in 1672, which contains accounts by one Jorevin, of his travels in England and Ireland. During this tour the writer visited the chief towns of the kingdom, and his notes show the wonderful changes which have taken place in many of them in something less than 200 years. The mistakes are ludicrous, but he seems to have been a good topographer, and to have described well the things which came under his own observation. After mentioning Westminster and the Strand, he says, "We may now go to see the Coman Giardin [Covent-garden], a royal market-place. In the middle of this market-place is the king's statue on a pedestal, and a church, the frontispiece of which is sustained by many thick columns, like the Pantheon at Rome. There are five or six great streets described by a line that leads to L'Incolne Infields—the fields of Lincolne,—which is a square larger than the Place Royal at Paris. The houses that encompass it are all built in the same style. The king has given them to the nobility for their residence. The middle is a field filled with flowers, and kept in as good order as as if it was the parterre of some fine house. The college of the University is here to be seen [probably Lincoln's-inn], which has a garden, with a fine terrace, from whence there is a view of this fine square, which is the ordinary walk of the citizens. The college of Gréze [Gray's-inn], is a handsome building. It stands in the street of Holborne, which is one of the largest in London, since it crosses it from end to end, only it changes its name in the different quarters through which it passes.

"As to what remains of the walls and ditches of London, they are scarcely to be perceived: they do not enclose a fourth of its extent. This centre of the town was burnt some years ago, with a very considerable loss of rich merchandize, the ruin of many palaces, and more than fifty churches. It is an astonishing thing to hear how this general conflagration happened, which, at the distance of more than ten leagues, seemed like a deluge of fire coming to burn the whole earth. Nevertheless, by an order from the king, all the proprietors of houses which had been burned were obliged to cause them to be rebuilt within the space of three years, in default of which their sites were to be forfeited, so that when I arrived in London, almost all was finished, when, in some measure, they attempted to make the streets straighter and wider. There was a man who laid a wager, that he would cause his house to be built up, from the foundation to the roof, in two days, which wager he won. It is true, all these houses are built only with bricks, one upon the other: they have, however, something so handsome in their architecture that they seem like little castles.

"It is certain that if there are as many houses in London as in Paris, London is the most populous, principally from the number of hands employed in the silk and linen manufactories, and other works of that kind, not to speak of the seafaring people, who are here as numerous as the manufacturers. In walking through the great street of Solborne [Holborn] one may

London of the Past: a Shop in Clare-market.

observe many things. In beginning to leave the suburbs you pass a small river, which formerly served to fill the ditches of the city, where there are still to be seen her ancient gates, garnished with large towers: these are at present the city prisons. There is a cross-way, ornamented with a fountain, after passing the bridge, to which adjoins the great street leading to the hay-market [Smithfield]. This is one of the largest markets in London, and here is the ancient church of St. Bartholomew, which at present serves as a kind of exchange for tradesmen, who have their shops therein; and near it is the church of St. Jones [John's], which was formerly a commandery of the knights of Malta. It is not far from the palace, or court of justice, where public affairs are regulated. The street of Holborne begins at this cross-way to take the name of Chipsayde, which is the handsomest street in London, enriched with many fountains, and with the Great Exchange. This was entirely burnt down, but at present is almost re-edified, and handsomer than it was before: it has a great court, surrounded by galleries, and great halls supported by columns, with all the figures of the kings of England carved in marble."

He visits the India House, and is surprised at the riches here displayed, and acknowledges "that the English well understand the maritime art, and that they are the true merchants of all seas."

"The Castle of London, called the Tower;" its broad ditch, filled with water; its magazine and stores; the armour of William the Conquerer, and that of the jester of that monarch, with horns fitted to his casque; the place where the coin is struck, are all noticed. He also sees the royal wild beasts, the treasury, in which is the crown of England, &c., and more than 2,000 large cannon, ready to be conveyed away, for the defences of places at home and abroad.

Along the river side of the castle runs a quay, and, beyond, a long suburb, which shelters,—along the Thames, and in the residue,—the seafaring people, waiting for a wind, and the loading and unloading of ships "which arrive in this fine river in such numbers that one may call London the most famous port in the universe. What displeases me in London is that there are so few quays along the river side, owing to which we cannot have a view of all those vessels, there being only some small stairs and platforms, for loading and unloading the merchandize into and from the vessels."

"Besides the great depth of the Thames, the water rises here more than two fathoms, which affords a subject for admiration how they have been able to build London Bridge, which is of stone, and in length upwards of 400 paces, with nineteen arches. The houses which cover the bridge had been burnt down and rebuilt: they are inhabited by rich merchants. At the entry on this bridge there is a machine like the Samaritan of Paris, which raises a quantity of water to furnish the fountains in the squares and cross streets of the City, from whence by the bridge lies the passage to Sodoark [Southwark], which might pass for a great city were it encompassed with walls."

Here our French friend visits the "Bergiardin" (Bear-garden), and was delighted with the battles of the beasts, but still more with some human combatants, who with swords mutilated each other. The visitor regrets that he was not able to attend some other exhibitions of a similar kind at Hockley-in-the-Hole and in other parts of the town. There were at one end of this suburb, not far from the "Bergiardin," two large hospitals for the poor, built, as some of our readers will be surprised to learn, "near a field where St. George with his lance killed the dragon which devastated the whole country." In the environs of this place are several beautiful pleasure-houses: that of "Pringiardin" (Spring-gardens) is a place of pastime and diversion for the youth of both sexes. Near it is the little village of Lambermark (Lambeth-marsh), in which stands the great castle of the Archbishop of Canterbury, and the house of a gentleman, filled with curiosities (the museum of the Tradescants). Recrossing the bridge, a handsome street is visited near a church, in which stands "Londonchton," which is a stone in the middle of the street, raised about a foot and a half from the ground. "This, it is said, was placed by William the Conqueror as a boundery to his conquest: others say it grew there spontaneously: be that as it may, the coaches by striking it in passing have much diminished it. One must not forget to observe it well, for it is said that he has not seen London who has not seen this stone." In these days one might go and walk in Moorfields, where are certain meadows where there are always jugglers and Merrie Andrews. A mile from them, towards "Common Gairden," was a little river called "Nieu River," a part of whose waters were conveyed by subterraneous pipes into the fountains in the City. When in this neighbourhood, we have a strange account of a pit or gulf to which no bottom can be found, and of a spring said to yield the best water that can be found in London, and that the king regularly drinks it at his meals.

To come, however, to evidences of great change remaining to us.

In the neighbourhood of Clare-market, Drury-lane, and some other now unfashionable parts of London, shops still remain which are so peculiar in their proportions that all endeavours to alter them, to a corresponding appearance with the now light and elegant places of business which adjoin, fail. We are thus enabled in a measure to judge what was the appearance of many of the shops in the metropolis in which a former generation quietly and comfortably carried forward their trades, and so were able not only to obtain the good things of this world, but to leave considerable fortunes to those who succeeded them. Some of these shops which so obstinately defy change have for more than half a century been occupied by hair-dressers. One of these, near the bottom of Drury-lane, on the west side, is a characteristic example. Two others, which bear the once well-known title of "wig-maker," are still within the precincts of the Temple. More might be mentioned, but, passing them over, we walk to the streets near Clare-market, once a place of genteel resort, but which is now in the possession of a dense and very poor population.

In those streets the dignified calling of the wig-maker has fallen into contempt, and in all directions poles of great length, brightly emblazoned, denote the changes which have taken place: the quiet hair-dresser has given way to the "easy shaver," who with striking display announces his calling. In some instances, fluttering banners catch the eye; large illuminated announcements denote the great ability of the various artists. In some windows it is advertised that this is the "only easy-shaving shop:" another, in still bolder letters, informs the passenger that this is the "original shop;" and close by is the "real original." It is advertised by some that gentlemen can be splendidly shaved for "one penny," and by others, that the operation can be performed for "a half-penny." At first sight one might tremble for the existence of the professors on such low prices; in the next place, for the safety of those who are under the necessity of submitting themselves to such a cheap operation. It will be found, however, on inquiry, that these tradesmen now consider it a very poor day's work if they do not, at 1d. for each sitter, earn from 10s. to 12s. on a Sunday morning, and on other less busy days a proportionate sum. To earn even 10s. requires, of course, 120 customers. If such a feat had been mentioned to hair-dressers thirty years ago, when 3d. was charged for shaving, they would have looked upon it as little less fabulous than the idea of the locomotive travelling at the rate of sixty miles an hour. However, by the assistance of apprentices, who systematically perform the least difficult parts of the business, leaving the finishing touches to the master, row after row are finished with fewer sanguinary effects than might be expected. At one of the half-penny shops, the cheap artist stated that his income was as much as that of those who charged the higher price: increased activity and better management make up for the difference of charge.

We have sketched the old shop near Clare-market to which we have referred. The small size of the windows speaks of dear glass: in some of the least important parts of the glazing may still be seen the central "knot." The wooden window-frames are of great thickness. In the windows there are not any waxwork figures, gay with artificial jewellery and flowers, but in lieu grim-looking wooden blocks, without human features, most of them worm-eaten. On some are wigs of different orders, in sooty and decayed condition: there are blocks on which the foundations have been cunningly laid in order to be ready for expected commissions: there are other wigs, not of legal shape, and of various hues: on others are singular bunches of ringlets and other mysterious matters, the use of which can scarcely be guessed by the passer-by. The pole is of very modest size, and the tints upon it are subdued and harmonized. In plain Italian letters, which have once been yellow shaded with black, is "——, Wig-maker and Hair-dresser." Few things can look more out of date than the whole exterior of this London shop. With the exception of improving the low, narrow doorway, there has evidently been little effort made to keep up with the age. Here a desperate attempt has been made: plate glass of moderate size has been introduced, and in modest type it is announced that "Gentlemen may be well shaved on moderate terms. Ladies' and gentlemen's hair dressed."

On entering, the dingy dimness of the place has a remarkable effect. You drop down at once to the early part of the reign of George III. With that old-fashioned politeness which has given place to a less ceremonious manner, the wig-maker discoursed on the changes of the times and his own decay. The oil-lamp had not been superseded by gas: on the shelves were rows of wig-boxes, on which could be dimly traced the names of "Serjeant ——," and others who are no longer toiling and troubling in the law.

On the door, conspicuously placed, was an old horse-shoe, and some "holy stones," fastened together with a string; the first for the purpose of ensuring good luck, and the latter to keep away witches.* In parts were numerous pincers and other instruments and tools already rusty, but which in future days may cause contention amongst antiquaries. The heavy rafters and panelling marked the ancient date of the premises: the quaint fireplace, the limited space, and other features, showed the difference between the past and the present.

The shop of the wigmaker is now closed, and the history is instructive. At one time, he said to persons who casually called for that purpose, "Sir, we do not shave." At last necessity obliged the condescension; but the worthy wigmaker was slowly driven. He could not be induced to write up, "This is the easy shaving-shop. Only 1d.;" and so business departed, as it has done from many others in different trades and occupations, who will not adapt themselves to the times, and avail themselves of the facilities which are at hand.

There are many in higher places who might take a useful lesson from the fall of the wigmaker; and we thus get a moral out of our gossip about London of the past.

MODERNISM IN ART.†

It might seem desirable, in commencing the few remarks I am about to make on "Modernism in Art," to define the term before I proceed to discourse upon it. But I prefer to leave the preface till the last; or, if you have not perfectly comprehended all that I mean by the term at the conclusion, we will discuss the matter, and endeavour to obtain some definitions of it.

M. Montalembert, in his celebrated pamphlet, speaks somewhere of the study of "contemporary archæology;" and this I cannot help fancying is a phrase intended to convey such notions of the

* About twenty years since horse-shoes nailed above the doors were not uncommon in Monmouth-street and other neighbourhoods.

† Read at the Architectural Association, Conduit-street, on Friday, the 30th ult., by Mr. C. F. Hayward, A.I.B.A. The discussion of it was postponed; and the chairman, Mr. Penfold, stated that the committee had determined to postpone the *conversazione* which had been announced for Friday evening, 13th of April, until some future day, to be afterwards announced.

value of the observation of daily life and present circumstances and living history, which I would endeavour to include in the term I have chosen.

The study of antiquity is enforced in a variety of ways at the present time: although the period chosen is somewhat changed—Classic to Mediæval lore,—societies in every county, and amateurs without number, devote themselves to the collection and contemplation of the minutest relics, often overlooking in the study of a detail the more broad and comprehensive objects of research, and caring less for the beautiful and suggestive than for the more curious and aged.

It has, however, been reserved for a French idea to form a political society for the sole purpose of studying and contemplating ruins,—renouncing any interest in the present, acknowledging one only duty, and that, the support of an effete piece of archæology which happens to be contemporary.

To the artist, however, and especially to the architect, the study of antiquity is necessary, not only to form his ideas, but to stimulate them; not only to awaken his enthusiasm, but to feed the fire of his genius; not only to afford fit subjects for contemplation, but to give him instruction and advice, and to offer suggestions for his daily labours.

Archæology is a necessity with him if he would excel, but its true use is like the study of history—of which, indeed, it is only a branch,—to teach lessons of wisdom, of warning, and of hope.

But to study ancient art for the purpose of reproducing it, without reference to altered circumstances and times, is the same as studying costume for a fancy ball, or the fables of heathen mythology, for the purpose of setting up the worship of Isis or Jupiter.

Moreover, it is quite contrary to the spirit of the arts in any age, for no art can be art (paradoxical as this may seem) which subsists on bygone talent, and has no power of its own but that of copyism.

Your antiquarian is not generally a surpassing genius of originality, but he lays up stores of valuable lore for those who have the wit or the wisdom to turn them to account.

Now it surely is a matter of surprise, that living in the present with all the associations and connections of modern life, and feeling all the force of passing events, and the attraction of the present times around us, that this spirit of antiquarianism should so often override and overrule our artistic notions, stifling the aspirations of genius, cooling the enthusiasm of youth, and distorting even those inevitable lines of beauty which are traced by the hand of the true artist.

Yet that it does so affect the fine arts generally at the present time—and especially our own branch of them—I think few will deny. None can be more ready than myself to admit that its influence is considerably less than it was even a short time ago, and to rejoice in the hope that its cramping and hampering influence shall entirely give way before the genius of nineteenth-century art; that its effect shall be recognized only in the curbing and restraining of too wild and sportive fancies, which, by substituting mere conceits for high art, often in the best periods bring down ridicule and contempt upon art and its professors.

Now, let us inquire how, in the history of our own branch of the fine arts, the wants of the period and the capabilities of the times were met,—how far ancient architects were modern in their day.

In Egypt, as far as we know or understand their works, they seem to have had their eyes open to the works of nature around them in the form of their columns, and the floral and other ornamentation they introduced, and even did not disdain to copy in enduring porphyry the tailors' work of the period. Then look to the use of the noblest materials in the noblest proportions. Of Assyria we know at least this—that their houses and their temples were suited to their circumstances and their purposes, and that their ornamentation and their sculpture commemmorated their modern events.

Who shall say that the great Greeks were antiquarian architects? Slight evidences of Egyptian studies, indeed, are to be found; but how great must have been the *originality* and *inventive* power of their architects,—what infinity of design, what amount of careful thought and study have been gone through before the simplicity of grandeur in their forms and the delicate magnificence of their decoration had been achieved. We hardly appreciate this inventive power in the Greeks sufficiently. Gradual, doubtless, but throughout original, and in the end perfect, was the architecture of this wonderful race; but it was also essentially suited to themselves, their worship, and their climate, and the materials around them.

The Romans were a progressive people, and I would give them the full credit of appreciating Grecian works, which is often denied them; while at the same time they were essentially modernists. They had different works to erect, and were masters of more science, though less delicacy of taste, and, let us add, less noble materials than the Hellenes.

Far from copying alone, they went on originating and adopting till at last their originality overcame their antiquarianism, and they produced their grand basilicas with vaults or domes such as Grecians never dreamt of.

Were they not modern? When a circus to hold half the city seated was wanted,—how was the difficulty overcome? Certainly not without reference to precedence, but with unprecedented boldness and success was the problem solved. Who was the Benjamin Edgington of the period who made the velarium? and what were the cushions made of? Such thoughts may help us to realize that these things were not built to be mere picturesque ruins for an English traveller to contemplate on a moonlight night, but were once modern works to serve the wants of the time.

Then, as to the Early Christians, I am disposed to fancy that a good deal of art we consider modern to them was ancient, inasmuch as they probably adapted many common pagan notions and symbols in their churches, &c. Yet what they built was most essentially different, and had a different purpose to serve from the pagan art around them, and when, as ages rolled on in the darkness or rather twilight of art, church after church was erected east and west, no slavish copy of former types, was held, but here a dome, there a round vault, and elsewhere a flat ceiling, all referable to former phases of art, but at the same time all modern in their day, gave a character and a distinctive individuality to the building.

And when at last this darkness rolled away, and the glorious power of the sun of Gothic art was felt, did the art traditions of antiquity or the originality of modern genius stand out as the vital spark of all this blaze? Step by step can we trace the path of this noble development of art, each piece in advance of the other spurning any backward movement for three centuries and more. One period, feeling its own power, disclaiming to continue its previous design if it had been stopped in its fulfilment, and taxing its own genius to find a fresh (at that time at least considered an improved) design for the remainder,—artists at one time overstepping the limits assigned by the endurance of their materials, then repairing their error by a fresh and perchance even a bolder experiment, triumphing over material, submitting to every variety of circumstance, and improving every opportunity and every local advantage.

Was brick to be obtained and stone not, the baser material was not despised, but shown to be capable of bearing the impress of the artist's mind.

Was iron available, it was welcomed by the designer, and wrought out with care, fashioned with the tongs by the smith into forms of beauty. Was glass manufacture established, the painter touched it with his brush, and the architect made way for it in his walls, cutting out of his stone graceful forms of tracery to set the most precious jewels in.

Foreign marbles were scarcely wanted where men could find at home alabaster, Purbeck, and serpentine.

Antiquity need not be searched for subjects to sculpture when the truths of Christianity were deemed worthy the noblest efforts of the sculptor's chisel. The painters of plaster walls were at no loss how to decorate, whether a flat ceiling or a vaulted roof was to be the subject of their labours. The workers of tapestry or stamped leather, the makers of furniture or armour, were all imbued with the same spirit, keeping up to the knowledge and requirements of their day, and being, perhaps, as ignorant of, as unable to copy, any art but their own.

And here is the gist of the whole matter: they had not to produce a Grecian work or a Roman, or a Romanesque, or an early this or a late that, but to do something modern, of their own time and period. Their employers would not have been satisfied with an Egyptian house, a Norman church, a Grecian museum, a Roman exchange, a Romanesque warehouse; but house, church, museum, exchange, or warehouse, would have been designed of one date and in the style of the time, embodying the best art which was to be had, each and all being individual artistic emanations, and no more to be confounded one with another than the individuals who built them.

Living art must be at unity with itself, and when so it must progress. A house divided against itself must fall: and so is art degraded when its professors are intent on producing archæological specimens instead of real designs, in the art of their own day.

Then, as to what is called Renaissance, or Italian revival of the antique: at the same time that we object to the inordinate reverence for everything of a former period in this phase of architecture, so that art was not valued with reference to its own intrinsic worth, but according as it embodied former notions in every detail, we must admit that the great element of modernism was not wanting in many of its arrangements. Indeed, under the hands of the great surpassing genius of the time, it was impossible that it could be.

And it seems to me that it is owing to this very circumstance that its influence in our modern times is to be attributed. When men shook off the trammels of precedent, behold what was produced in Florence,—buildings which embody the spirit of their times in every stone. See at Venice what was the effect of Palladio's cold but correct tabular architecture, and read how its proportions are described in all students' books, as if it were a table of some Building Act, showing how the proper thickness of a wall was to be found by the rules of arithmetic. The finest buildings of this period are those least of all correct, and perhaps one of the wildest of all—the church of Sta. M. della Salute, in Venice—has, in my opinion, as fine an outline as any building of any date. Yet, as I said, the necessary element of life existed in the style, viz., its sympathy with the wants of the age, and the requirements of the period. I cannot help, however, stopping to remark the great individuality of the artist, his personal ascendancy over the style, not, as in the preceding Gothic period, when the workman was lost in the grandeur of the style and the great art spirit of the period seemed to pervade all grades alike. I do not desire to lower our estimation of the fifteenth-century artists, but simply to point out this significant fact, that they seem more prominent than their art.

To come to more recent times—the seventeenth and eighteenth century,—how did architecture adapt herself to the wants of that age? Has she generously accepted the altered circumstances of the times—made the popular requirements her own, and so popularized her art? Has she adopted every new scientific improvement, and clothed it in robes of beauty, adding all the loveliness of grace to mere constructive requirements, and moulding every form of pure workmanship into a shape of artistic excellence? In short, has she been worthy of her high mission?

Nay, is it not rather true that, through pride or incapacity, she has held aloof from the great work of the times,—that of infusing the spirit of her art into everything about her? Despising this her true mission, she disdained to touch any but great works, and so in turn was not permitted even to direct these, till at last architecture herself seemed dead, and all appreciation of her seemed confined to pure archæological students; and when at last she began to show signs of life, it was in this archæological direction she began to move, and the antique school for a long time endeavoured to keep up this backward tendency. The architecture which is to endure beyond the fashion of half a century must be the art of the day—modern in its appliances, its arrangements, and its tastes—like all the great developments of art before it in every age.

In the foregoing remarks on periods of architecture, I am speaking, of course, very generally; otherwise I might have referred to many illustrations of the truth, or to the exceptions which may be found in the works of some individual artist—our own Wren for instance.

I might, I think, show where he is essentially modern in his designs for Protestant churches, although he sometimes based his notions on Gothic, partially learned, as well as on Italian architecture, most profoundly studied. I might show that his greatness is exhibited more in his departures from "correct" Classic proportions and arrangements than in his adherence to them; that his genius is greatest where it is least indebted to antiquity; that where he has been most blamed by *dilettanti* architects he has shown most his high appreciation of the circumstances and necessities of his work; in fact, that the chief reason of their influence, and the chief value of his works is, that they contain, in a great degree, that necessary element of all true art,—modernism, or adapt-

ability to the wants, and sympathy with the feelings, of the times in which they are wrought.

I believe St. Paul's churchyard is the first space which was enclosed by cast-iron railings, and I never hardly pass by them without recollecting this significant fact.

Now, had Wren been properly supported by men of his own profession, had his followers been imbued with his spirit of true art, united to his love of science,—had his mantle of modernism fallen on any of his pupils, or rather had it descended upon the members of his school, instead of being partially caught by a few, what a noble position might our art have been in at this time. What an amount of noble work might have been found in our cities, and what a mass of ignoble and base erections might we have been spared. If he had been allowed to plan London afresh and been followed by true men, our city might have rivalled any in the world, and we might have taken the lead of all nations in art as we have done in science, instead of labouring day by day—pushing back a house here and there to get space enough to move along our streets—beseeching now and then some Board of Works to grant us a few feet more room to get a sight of what architecture is left to us by that great man! But the real state of the case will serve to show that an individual, however great, has but limited influence, and, therefore, how vain to hope of any great permanent artistic change, except from a whole generation of artists!

Of course other circumstances had their influences, but I do attribute to the school which Wren founded—to their want of sympathy with their great master's principles—the dearth which followed. It seems to me that had they perpetuated his principles and carried onward the work of revival which he, in a measure, may be said to have recommenced, the public would have learnt to confide in them, and would have entrusted to architects, not only their churches, hospitals, and public buildings, but their warehouses, shops, business works, and private dwellings.

Instead of this onward march, we have to note a retrograde movement—less modernism, more antiquarianism—till the building public learnt to believe that architecture was a mere toy, or at best a sort of conventional dress which was proper to be used on state occasions; that it was meant only for display of wealth, or to please the fancies of some learned nobleman.

Thus, when a house was to be built, if it were substantial it must be plain,—if it were to be good it must have no gimcrack ornament,—till at last your Harley-streets, Baker-streets, and Portland-places were produced, and not only built, but, worst of all, considered the right thing.

Thus, when a public building was to be erected, the folio of the works of Palladio, or the wonders of Athens, measured and drawn by Stuart and Revett, had to be appealed to, or again the remnants of Rome as delineated by Desgoatz; and nothing could be done without the sanction of the great god of architecture—Vitruvius. A portico was a necessity, and the originality of a novel intercolumniation of, say an inch or two more than usual; or, perhaps, an Ionic capital with two baluster sides next each other, so as to show the curls on the outside angle, was the subject of discussion and sufficient artistic capital for a lifetime.

So it came about that an architect must travel to Athens and pick up sufficient unused "antiques" to form novelty at home, and the art of design was mere tact in picking out suitable bits to fit in given positions.

To come to even later times, have we not to lament that sort of censorship which has been set up over the early workers of our Gothic revival—by amateurs and others learned in Mediæval archæology—nay, is this over yet? Must not an architect be prepared with precedent, chapter and verse—for his design—be it from Italy, France, or at home.

Has he ever to defend the principles of his designs; or, if he has and is successful so far, are they admitted without his being able to point to some building or other, being very near relationship to his work?

If these remarks are considered as applicable to a few years back, but not to the present moment, so much the better. So much are we nearer what this generation, I hope, may yet see a rational and national modern nineteenth century architecture—based on the wants combining the resources—appealing to the sympathies and embodying the sentiments of these glorious days of prosperity and content.

Of style, I do not intend to say much, but this I fully believe, that had our seventeenth and eighteenth century architects been all minor Wrens—looking to his almost at the time *isolated*, though perhaps cold, appreciation of some of the beauties of Gothic architecture, noting that more than once he built in that style, with, we may say, partial success;—I say, observing all this, I believe that our own noble examples of Mediæval architecture must have made an impression on the minds of the seventeenth and eighteenth century architects, had they been worthy to tread in Wren's footsteps.

We should, I believe, have long ago taken up our national style, and wrought it out into something as superior in power, at least, if not in beauty, as our scientific works are superior to our materials, and appliances more varied than those Mediæval times.

So we should have saved a whole century; and not only this, but, without having progressed, we might at least not have retrograded altogether, nor been compelled to lose further time in picking up lost ideas in experimenting to find the lost path.

And again, the nation would not have lost all appreciation of architecture as a modern art, nor looked so coldly and suspiciously on its professors.

We should have had nothing like the National Gallery, purely archæological in all its associations. We should have had a decidedly different British Museum, where all the ideas are referable to Greece, and our churches would have probably contained some allusion in their sculpture or their design to the Christian religion, other than the simple reminder that Paul preached at Athens, from whence also the architectural details were borrowed. Look how Wren rendered the pediment of a Classic building interesting to the people for whom, and illustrative of the object for which, it was erected. Was he right in making St. Paul and his followers usurp the place of Jupiter and his? Then have we been wrong ever since till our Gothic revival.

I put forth the broad statement not with reference to pediments only, but to ornamentation generally; and I use it as an illustration of my remarks.

No doubt, the hard study of Gothic has been necessary to ground us in its principles. No doubt, the buildings which have been erected in this style were necessary reproductions of ancient Gothic forms, to give confidence to ourselves and those who employ us; so gaining liberty for our own artistic emanations. No doubt, the spread of archæological study of the Mediæval age among amateurs has led to the formation of a body of the public deeply interested in, and capable of appreciating, the efforts of modern as well as ancient architecture.

But still it is time we began to build modern churches without always taking ancient churches as our models for every arrangement. It is time we showed the public that Gothic architecture applied to public buildings is not a mere affair of mullions and lead-lights; that a warehouse can be of true modern architecture, and yet accord with the ancient principles of Mediæval art, which was, in fact, the greatest common-sense architecture of the time; and that iron girders, and plate-glass, and gas burners, are not inimical to true art, and only a difficulty to a mere archæological architect or church restorer.

An amusing illustration occurs to me:—Some fifteen years ago, a gentleman, looking at the restorations then going on at a church of Bury St. Edmund's (being more of a business man than an artist, and decidedly rather modern in all his notions than antiquarian), spoke to some one in the church who seemed connected with the works, and suggested the introduction of the Bude light, then a favourite patent method of lighting used in St. Pancras, and a few other great London churches, in some of which even now a sort of inverted glass umbrella remains to testify to its adoption.

Fancy the horror of the architect, who turned out to be the gentleman addressed, at this bright idea:—"Sir, if I had my way, nothing but wax candles should be used, and few of them."

Yet, though my friend was wrong, we cannot admit that the architect was right, or was working in the spirit of the old Gothic men. The church itself was a mass of window space, which was doubtless filled with gorgeous colour; and yet, a century and a half before, perhaps not more than a hundredth part of the light would have been admitted into the church. Why? Because they had not the glass to use.

Shall I be told that Mediæval enterprise would not have used gas in their churches had it been invented, or plate glass either? And yet we have men, even to-day, lamenting over railways, and gas, and telegraphs, as if the advance of mind in one direction were antagonistic to its progress in another. Rather let us imitate the spirit of Gothic art by refusing to copy even its sublimest efforts, lest we end by spoiling for ever the effect of the original.

Would our churches be the worse for being warmed and ventilated and used, instead of being shut up and preserved? Rather would it tend to the breaking down of the idea that architecture is a mere abstract idea, and not a living art for daily use and everywhere.

If we are true to ourselves—such is the rising spirit of the art in the public, I believe, such the increase of intelligent, independent judges, such the opportunities of seeing examples of good modern art everywhere, and such the resources at our command—that nineteenth-century art has only to be cultivated, to grow into a flourishing and widespread tree. It is already planted: there are those capable of guarding and protecting its tender years; and it only depends upon the rising generation to do their duty, and it will bring forth fruit to perfection.

Let us not forget the magnitude of the work; for it is not only here, but in Australia, in Canada, in India, and Constantinople, as well as on the Continent, our architecture is demanded,—not only ecclesiastical (for some would fain persuade us that our art is only fit for religious purposes), but large secular buildings,—universities, museums, Parliament-houses, at home and abroad are rising, and will show in after ages what we were capable of in the nineteenth century.

I question then if there will be much care as to whether the early part of the twelfth century, the middle of the fifteenth, or the late fourteenth, or the too late fifteenth century, was the basis of the design, if only loveliness of form, fitness of purpose, hearty sympathy with the work, and true artistic power be discernible in all.

Then shall we have praise for our modernism, and not blame for our want of it, and though our individuality be lost, what matter, if only the great flow of artistic genius envelop it, instead of its being overwhelmed by the ignominious cloud of incapacity. In a generation of artists, few names, and those are of surpassing power, will survive; but, if we have all done our work in elevating the art of our day, we may feel satisfied in leaving the result to futurity, and rely on the fair judgment of posterity.

It would take a long time to discuss,—but I believe it is intimately connected with my subject,—the divorce of science—*par excellence*, the "science" of construction—from the "art" of architecture. It might have been necessary for the onward course of mighty modern inventions, such as railway viaducts and bridges, and so it might inevitably have come to pass even had the followers of Wren been worthy of him. But still, when I recollect what a man of science Wren was himself, when we see what the artistic men of the fifteenth century did,—what the priestly architects of Mediæval times,—what the Roman, or Grecian, or Egyptian architects achieved,—I am constrained to believe that artists must have in a measure *voluntarily* resigned their position, leaving engineers to build bridges, aqueducts, railways, and docks,—speculative builders to houses, and hotels, and shops, and stores; gardeners and iron-founders to do crystal palaces and railway stations, and retaining to themselves only the few public buildings which admit of pure æsthetic (!) treatment, and a few private works which their friends may wish to put in their way.

Who built the bridge at Narni 1800 years ago; and who spans rivers and streets, miles in width, in the present day? The architect or the civil engineer?

It may be right that our Leonardo da Vincis should confine their attention to canvas or fresco; but surely architects should not have lost all control over the chief civil and domestic buildings of their country.

It seems to me that it is in the power of the present generation to regain it in part, and I commend this notion to your consideration.

In the foregoing observations I have confined myself to our own branch of the fine arts, but I believe the same remarks will hold good, in a modified form, with respect to the sister arts of sculpture and painting. Why have we Nymphs at the Bath without end, and so few embodiments of the most stirring incidents of our own history, our own religion, and the events of the present period? Vacant pedestals seem to be our chief advances towards the statuesque decoration of our cities; invitations to young England to achieve something worthy of a hoist up, as if no one yet had done anything for the country but Nelson and Wellington. But there are signs, I hope, of something better in time.

Painting, too, does not disdain to represent the

events, the costume, the emotions of the present day, and some of the noblest art is applied to perpetuate scenes which will be hereafter identified with the nineteenth century. But it is as impossible for one branch to flourish without the rest, as for a good tree to bring forth evil fruit. Frescoes have begun to enliven our blank walls, and sculpture to adorn our empty niches.

Let sculptors and painters look to it—the game is in their own hands.

And now for a few illustrations and I have done. I have referred to the British Museum as a piece of archæology: now let me speak of the reading-room as a piece of real modernism. Here is the Pantheon dome translated into modern language;—suitable to all its purposes,—light, solid, fireproof, convenient for readers, yet wanting somewhat in decorative finish; though this is not the architect's fault. The new Museum at Oxford was in many points not so successful at first; I mean as regards its constructive roofs of iron and glass: what it may be as a work of scientific art we hardly know yet; but of this I am sure, it will be a source of wonder to many who could not conceive the artistic value of metal-work, or who believed our smiths incapable of producing artistic forms in it, and who, when iron was mentioned, had only visions of tubular bridges and wrought-iron girders, studded over with little dots called rivets. Railway engines and tenders have been made highly decorative, and gorgeous metal-work pavilions have been sent after them to the luxurious East.

Our own Crystal Palace does not pretend to be artistic, except in its mighty covering of space; but the Floral Hall is a combination of science and art on a smaller scale, which, as a sign of the times and a great stride onwards, is very valuable. St. James's Hall is another example of the use of modern appliances artistically worked out.

But time would fail me if I were to enumerate the great and small churches, warehouses, mansions, clubs; and, indeed, I must not attempt so great a task as to criticise them even as a whole.

This I will leave to your own suggestions, and shall venture to hope that you will be urged to consider some of the points I have brought before you.

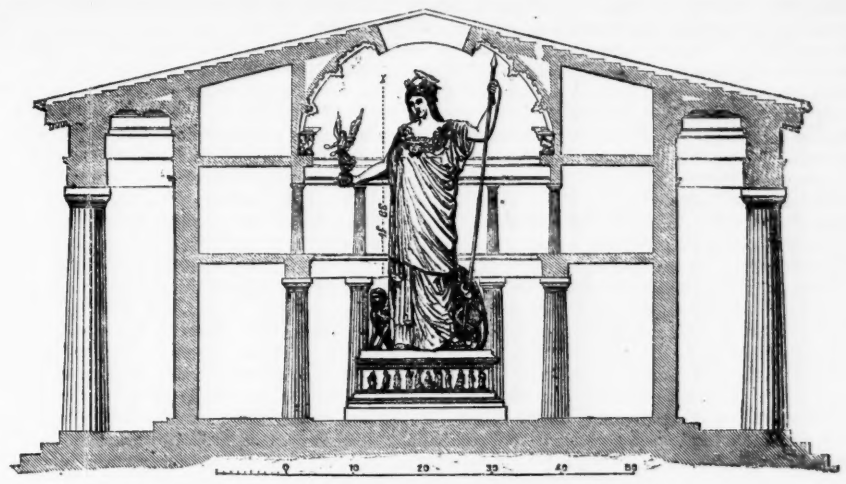
Crude, and perhaps erroneous, may these few observations be; but they have this in them,—that they emanate from one sincerely anxious for the best interests of his profession, and ready in any way in his power to advance the study of all true art.

WAS THE CEILING OF THE PARTHENON FLAT OR CURVED?

MR. EDWARD FALKENER is about to publish a new work, entitled "Dædalus; or, the Causes and Principles of the Excellence of Greek Sculpture." As a frontispiece he gives his restoration of the Parthenon, with the statue under a curved roof, to which we referred some time ago, and prefixes an introductory essay headed as above. From this we make the following extracts without comment. The work itself, we have no doubt, will be valuable.

"It is due, both to myself and to the subject, both to myself and to my readers, to offer a few remarks on the frontispiece to this essay. A vaulted ceiling to a Greek temple is so repugnant to one's ideas of Greek taste or Greek knowledge, that few critics will be independent enough to pause in their opinion, when they find that the great majority of persons, learned and unlearned, unhesitatingly condemn it as an absurd anachronism. These few people I invite to follow me. If it can be shown that the traditions of art as to the non-employment of the arch are only of modern date,—if necessity can be shown for its introduction, and history confirm its usage, then, and then only, can I expect my readers to agree with me.

Of evidence from actual remains we have none. We have not, in any of our museums, a single specimen of a Greek ceiling. Those which are pointed out to us are the ceilings of porticos, not of rooms. These porticos do not exceed 10 feet in width. Nothing could be easier, or more natural, than to cover these porticos with stone. Argument would be unnecessary to prove it, for experience shows it in the remains of every ancient temple. It is from these ceilings of the outer porticos, the stone or marble lacunaria, overlaid with gorgeous colouring and gilding, that architects have too rashly presumed that the interior also of the temple was covered in a like manner. But this opinion is unsupported by any proof, or any confirmation.* Nevertheless, the opinion has been



SECTION OF THE PARTHENON.

received and adopted, and modern buildings, as, for instance, our National Museum, which are erected after the Greek manner, have their ceilings, it may be, of cast-iron girders, or lath and plaster, painted to imitate, what it would be impossible to execute,—a marble roof. Such, then, is the tradition of the so-much-talked-of trabeated ceilings of the ancients. So little do we know of the interior of the Greek temples, that we cannot even decide upon their arrangement. Some have supposed that the hypæthron consisted of a range of skylights on either side, ignorant of the sacred signification of a hypæthron. Some have supposed that there was only one order of columns within the temple; others that there were two, and that the second reached the ceiling. Some have supposed that there was indeed an upper gallery, but that this gallery was void and unadorned, a receptacle for dust and cobwebs; others that there was not even a gallery, but that the two orders of columns went round the cella like a screen or scaffolding. With this ignorance as to the internal plan, can it be wondered at that we were unable to discover the nature of the ceiling? It has been asked, how is it, if such vaults existed, that no mention of them has been made by ancient writers? With the like reason we might ask, how is it, if such galleries existed, that they are not described? We have assumed the fact without attending to the contrary. But of this anon: we pass on to the second point.

Perhaps there is no temple, with the exception of the Temple of Jupiter Olympius, at Agrigentum, of which so many attempts have been made to restore the interior, as the Temple of Minerva, at Athens. Of these projects two deserve attention. The one, entitled to consideration from the celebrity of its author, carries up the columns to the line of rafters, and makes the line of ceiling to correspond with that of the line of roof: the other gives a less altitude to the columns, but covers the cella with a horizontal ceiling. In the former case the architect could only succeed in his object of reaching the line of rafters by employing imaginary Corinthian columns, and elongating them at pleasure, while his line of ceiling, from being angular, could never have looked well. The hypæthron of such a ceiling, exhibiting a double notch, must have appeared most awkward; and, indeed, the form is more like that of an Etruscan tomb than that of a Greek temple.

In the other design the hypæthral opening likewise constitutes an objection; but in this case it resembles a well, the depth and narrowness of which precludes the admission of a sufficient body of light, while from its peculiar form the upper part of the interior must have been in continual gloom. But a more fatal objection arises from the fact that an interior so constructed would not have been sufficiently lofty to contain the celebrated Minerva of Phidias.

The statue is represented as being 26 cubits in height, while her spear touched the ceiling. She stood upon a pedestal on which was sculptured the birth of Pandora, attended by all the gods of Olympus. The plan of the pedestal may still be traced on the pavement, by which we find it to have been 21 feet 6 inches long by 8 feet 6 inches wide, with a railing round it extending nearly 3 feet more on every side. This must have required a height of about 10 feet to be in proportion, which, added to the 39 feet, or 26 cubits, gives us a total height of nearly 50 feet. This height of 50 feet requires the utmost limits of the temple: so that the horizontal ceiling must be rejected, were it only from this evidence. Of these two projects, therefore, the one is inadmissible from the loftiness of its colonnades, the other from the lowness of its ceiling. The only alternative, then, is a mode of construction somewhat similar to that exhibited in the frontispiece.

We now come to the third point of consideration, how far such theory is in accordance with historical data. Much has been written regarding the antiquity of the arch; and the general impression is, that it was not invented, or at least not commonly made use of, when these temples were erected. M. Dutens, on the other hand, insists on the remote antiquity of its invention, and M. Quatremère de Quincy believed in its employment by the Greeks at the highest period of their history. The last-named writer based his opinion on the description of the Temple of Jupiter Olympius at Elis, where, it is said, 'The statue of Jupiter was of so great magnitude, that though he was represented sitting, his head seemed to touch the summit of the roof; and if he arose and stood upright, he would have broken through the covering of his temple.' M. Quatremère suggests, from the words τῇ κορυφῇ τῆς ὀροφῆς, the summit of the ceiling, that the central part of the temple had a circular ceiling of wood; observing that it is but a circular ceiling which can have a summit.* This opinion Kinnard strongly opposes, without offering any other interpretation, perhaps without having any. He contents himself with saying, "So gross an anachronism as the introduction of the representation of a type or principle then unknown can scarcely be contemplated with gravity."† M. Quatremère supports his theory by imagining that the arch which is shown on many Roman coins of Grecian buildings represents the vault of the temple; that the artist endeavoured to show in one view, the front portico, and the interior of the temple, with its statue and vault over; a conjecture which is perfectly reasonable when we recollect that the ancient medallists were frequently in the habit of giving conventional representations of the objects which they wished to portray.‡ * * *

M. Quatremère believes that Pausanias, where he says λίθου καὶ αὐτὸς ὄροφος,§ in speaking of the temple of Apollo at Phigalia, is describing a stone vault; and he further goes on to remark that Pausanias tells us that in the city of Megalopolis, near the portico Philippeon of the Forum, is the Temple of Mercury Acacesius, of which nothing but the stone vault (χελώνη) remains;‖

* Unless the temple were very small, or the cella of diminished width, as in the temple of Apollo at Bassæ, the roof of which Pausanias expressly mentions was of stone. —Paus. xli. 5.

* Q. de Quincy, "Mémoires de l'Institut—Hist. et Lit. Anc.," tome iii. p. 242; "Le Jupiter Olympien," Part IV. parag. xii. p. 267.

† Kinnard, "Stuart's Athens," ii. 34.

‡ A distinguished architect has just published a most interesting and valuable work on numismatical architecture ("Architectura Numismatica; or, Architectural Medals of Classic Antiquity." By T. L. Donaldson, Ph. D. London: Day & Son, Gate-street, Lincoln's Inn-fields), in which he propounds a new theory. He supposes that these conventional types of temples are mere baldachinos, instead of temples, as has always been supposed by the learned. I leave the subject for numismatologists to decide, and merely refer to it to show that I have not adhered to the general opinion without consideration. Animated, as all antiquaries should be, by the like zeal for truth, and love of art, a difference of opinion in details must yet always be expected.

§ Paus. viii. 41.

‖ *Ib.* viii. 30.

while Pliny informs us that Dinocrates began to vault (concamerare) the temple of Arsinoe in Alexandria.* Vitruvius, in recording the names of artists who wrote on their work, says, "Theodorus Phoceus (scripsit) de *tholo* qui est Delphis,"—on the *vaulted* (temple) which is at Delphi. Roman temples, we know, were sometimes vaulted, as at Nismes, at Baalbec, and the temple of Honour and Virtue at Rome. * * *

We have evidence of the arch existing in the time of Alexander, it having been used by Dinocrates in the temple of Arsinoe: we have seen it attributed to Democritus, one century earlier, while a conjecture has been raised that its origin was of a still earlier epoch, the opinion seeming to be based on monuments the antiquity of which could not be disputed.

It is well known, however, that the Greeks were in the habit of appropriating to themselves the discoveries of other nations, and we must therefore go back to a far earlier date for the discovery of this important principle. It has been found that the arch was very generally made use of in Egypt 1490 years before the time of our Lord, as is proved by the monuments of Thebes and paintings at Beni-Hassan, while a still earlier use is shown by the brick pyramids, which were built several centuries earlier.

Thus it must be acknowledged that, were the question even about a vault, it is far from improbable but that a vault might have been employed; but the frontispiece does not show a *vault*, it merely represents a wooden ceiling of a circular form: the one is an arch of masonry and construction, the other of mere form and semblance. It is unnecessary to say that there is a vast difference between the two. I do not show a vault,—not that I doubt the antiquity of the vault, but because I believe that most of the temples were ceiled with wood.

* * * * * * *

Having restored the colonnades as described, I found that there was yet remaining a considerable space to account for, while, on the other hand, I required the utmost altitude, in order to admit the statue. This space being just sufficient for a semicircular arch, and the arch being the form which filled up the angular lines of walls and rafters with least sacrifice of room, I did not hesitate to adopt it, particularly as I considered that this was the only form capable of admitting the colossal image, and that it was the only form in which the hypæthral opening could partake of a graceful character. As regards effect, I consider that the arch-form gives greater height and magnificence to the building than any other, and that it best harmonizes with such a statue."

* Plin. xxxiv. 14.

COPPER AND ITS RELATIONS.

IT is to the dark and obscure periods of our prehistoric annals that we must look for the origin and development of the art of working in metals. Next in order, and standing in bold relief to the barbarous usages of the stone period, followed a step so gigantic in the march of civilization, that history itself will scarcely afford another instance so remarkable. The discovery of the method of working in metals—and copper was among the first of these—constituted a memorable triumph of mind over matter; and was of such importance in its results, that the BRONZE PERIOD of the archæologist will ever be regarded as an era in the social existence of our race.

The antiquity of copper is thus possessed of no common degree of interest. Its relics, indeed, form the best and most connected link between the minds of this generation and of those that have long since passed away. The tombs of Memphis, the cemeteries of Etruria, the disentombed treasures of Pompeii, or the relics of Scandinavian superstition, bear testimony alike to the universal applications of copper, and bring to light the same glimmering indications of human progress. The hitherto intractable boulders of granite, or the softer limestone rocks, were fashioned into square blocks, and at length applied to all the purposes of building. The gregarious and social habits of our race, even in its rudest stages, led to the formation of communities. Coinage was established, and the principles of currency originated. Spade husbandry—if the miserable flint and wooden implements permitted anything deserving of the name—was changed for that of the plough. Men began to practise the humanizing usages of interchange and commerce; and not only that, but they also—after a true and time-honoured principle in political economy—improved their warlike instruments.

The pages of sacred history abound with minute accounts of the early acquaintance of the Jews with the arts of metallurgy. But with regard to their mines, and their mode of working the ores, the same accuracy is not preserved. "Report states," observes Bishop Horne, "that there was anciently a copper mine at Aleppo, which, however, must long since have been abandoned; but the fact substantiates the accuracy of Moses in his description of the Promised Land, as 'a land whose stones are iron; and out of whose mountains thou mayest dig brass' (or copper, as the word should be rendered.)" Egypt furnishes some of the most interesting relics of copper which have yet been brought to light. From the indelible paintings on the tombs of Thebes we likewise derive a very complete and accurate knowledge of the modes of casting bronze practised by the ancient Egyptians; and what is very remarkable, the same methods, and, with but little improvement, the same implements, are still employed by the Arab and Cingalese workmen of the present day. The early inhabitants of Etruria and Central Italy were particularly skilled in the arts of mining and smelting copper. They possessed a bronze and a copper coinage from the earliest times: and the singular application of the copper ploughshare, to mark the boundaries of a city—as Romulus ages afterwards did at the foundation of Rome—was one of the superstitious purposes to which the metal was put among the ancient Etruscans. The Greeks were, also, at a very early period, familiar with the uses of copper, and with the art of smelting its ores. Their chief supply of minerals was first obtained in Attica, and from the island of Cyprus (from which place the metal derives its name); but in process of time they sought for and discovered it in Western Asia, in the south of Italy, in the Alps, and in the mountains of Spain. The Greeks and Romans were profuse and even prodigal in their consumption of this metal. Enormous quantities of copper were consumed in the production of their colossal bronze statues, the ornaments of their temples, their instruments of art and war. The scholar, the antiquary, and the admirer of ancient art, will alike regard with interest this period in the history of copper, on which, however, it is beyond our present purpose to dwell.

The origin of the art of alloying copper with tin to form bronze is lost in the obscurity of the mythological period. But we cannot fail to perceive, at a single glance, the exceeding value of this discovery, which, in all probability, was made by accident. Copper is, comparatively, a soft metal, and of itself altogether unfit for the fabrication of the sharp and cutting instruments of art and war, which the tastes or necessities of mankind desired; but mixed with tin in proper proportion, it forms an alloy so singularly hard and dense, as to be equal almost in these respects to tempered steel, and certainly far superior to the softer kinds of iron. Bronze implements are also possessed of a much more imperishable character than those of iron. A small bronze knife, dug up at Thebes, was found to have preserved its edge as perfect and entire as it could have been 2,000 years ago, when it was first entombed. The proportions of this alloy seem to have been ably and almost scientifically investigated by the ancients. Indeed, it has been held—and Dr. Priestly was of this opinion—that they were acquainted with some alloy, or possessed some mechanical means of hardening copper to a degree much greater than the bronze of modern generations. Bishop Watson, however, controverts this view; but the point is of small importance, since it is indisputable that the ancient metallurgists were, either from observation or experience, remarkably skilled in the proper proportions of its manufacture. It is very singular, moreover, that all the specimens of ancient bronze which have been analysed correspond closely in those relative proportions which are known to produce an alloy of maximum hardness. Some bronze nails, for example, and some ancient coins of Corinth, a very ancient Greek helmet, now in the British Museum, and an antique sword found in France, have been shown to contain respectively from 86 to 88 per cent. of copper, and from 12 to 14 per cent. of tin.

Of copper mining in England we have no authentic history. It seems probable, from certain rude indications in old and abandoned mines, that copper was worked at a very remote period in the mountains of North Wales by the ancient Britons. It is also probable that in the county of Cornwall the early workers of tin—whose traffic in that metal we read of with the Phœnicians—could scarcely fail to make the discovery of copper, since the ores of the two metals are sometimes found in intimate contact. But however this may be, we know that this immense source of mineral wealth was almost neglected in that county until within a comparatively recent period. We have also evidence to show that the Romans worked copper mines in England; and, from the existing remains of these mines in Anglesea and Cumberland, together with their extensive applications of the metal, we infer that mining by them must have been pursued with their characteristic skill and with their accustomed success.

It was not until the middle of the last century that copper mining in Cornwall received its greatest impulse. Mines were sunk to greater depths: new hydraulic engines were constructed; the machinery improved; and the operations generally systematized and reduced to method. Hence it was not long before this important branch of mining enterprise assumed its true position in the valuable produce of the country. Sir Charles Lemon has computed that for fourteen years previous to 1758 the yearly value of Cornish copper was 160,000*l.* Half a century later the same annual produce had increased to 550,000*l.*; and now the copper works of Cornwall and Devonshire are undertakings of enormous magnitude.* They are sunk in some cases to the enormous depth of 300 fathoms, and are drained by means of the celebrated Cornish engines, which for size and power are unparalleled in any country in the world. They are generally worked by companies of adventurers. If the mine be on waste land, it belongs to the revenues of the Duchy of Cornwall, and the lease is obtained from the Crown. If on private property, it is let from time to time on special terms, and these consist of a payment in kind, varying from 1-25th to 1-10th part of the produce. It is proper to state, however, that these rates, or "lord's dues," as they are termed, are modified with the facilities or the difficulties of working the mine. Some copper-mines pay thousands of pounds sterling of rent: others, again, pay no rent whatever. The profits arising from them, however, are occasionally very large. Sir Henry de la Beche mentions a copper-mine,—that of Wheal† Alfred, in Cornwall,—having afforded at one time a net profit of 140,000*l.*

But we could not, perhaps, select a better illustration of the enormous extent of these copper-mines than what is comprehended in the statistical tables of Mr. Burn's valuable paper, in the *Mining Review*, respecting the celebrated consolidated mines in Cornwall. These mines are situated about two miles east of Redruth, and they form one of the remarkable chain of important mines existing on the great mineral vein which traverse the district in an easterly direction, from the Land's End in Cornwall to the Dartmouth hills in Devonshire. They are, or at all events they were recently, the richest mines in Cornwall; and they are still by far the deepest mines in England. They consist of four distinct mines,—Carhurruck, West Wheal-virgin, Wheal-virgin, and Wheal-fortune. The nature of the rock is chiefly clay-slate, resting upon granite; and the metalliferous veins are from two or three to seven or eight feet wide. The depth of the vertical shaft in one case exceeds 1,800 feet. The underground workings extend to upwards of *seventy* miles of linear measurement! The ores raised are chiefly copper; and of these the blue and green carbonates predominate. Nine steam-engines are employed in the drainage; and their probable equivalent in actual power is 4,500 horses. The annual expense of this drainage is 12,700*l.* The quantity of ore produced is, on an average of ten years, 16,400 tons of copper, and a little tin; the value of this, 119,800*l.* The total cost of the mine annually amounts to 93,500*l*, exclusive of lord's dues; and, with these, to 98,500*l.*; clear profit to the proprietors, 21,000*l.* per annum. Amount of capital invested, 75,000*l.* Interest, after paying back the original capital, 200 per cent! Number of men, women, and

* The total quantity of copper ore raised from the Cornish and Devon mines during the year 1858 realised 1,057,535*l.*: the value of the copper and copper ore imported into the United Kingdom during the same period amounted to 3,099,816*l.*, making a collective amount of 4,157,351*l.*; while the export of wrought and unwrought copper for the same year represents a sum of 2,933, 221*l.*, thus leaving an amount of copper to the value of 1,224,130*l.* for home purposes for that year. The average price per ton of copper ore was—

Cornwall and Devon	£5	14	8
Australia	20	4	0
New Zealand	14	0	0
Chili	18	10	3
Cuba	13	3	0
Spain	9	6	0

† *Wheal* is a very old Cornish word, signifying pit or mine. It is met with at every turn of mining phraseology.

children employed, about 2,500, of whom about 1,400 work underground.*

Such are the plain matters of fact connected with a Cornish copper-mine in the nineteenth century. This, however is only one, though certainly it is a remarkable example of profitable adventure in copper mining. The celebrated Burra Burra mines, in South Australia; the Santiago and Cobre mines, in Cuba; the Copiabo mines, in Chili, and others might be named that are equally startling in their amazing richness. But the picture has its dark side. A copper-mine is not always such a profitable adventure, as some of our readers may know to their cost.

We may add here, that although Cornwall and Devonshire are so remarkable for the produce of copper ore, not a particle of it is smelted there. From the great poverty of coal in these districts, it is found better to transport the ore to the coal districts of South Wales, chiefly to the extensive copper works of Swansea and its neighbourhood. The propriety of this will be very apparent from the fact, that for every ton of pure copper produced from average ores, about twenty tons of coal are required.

It is very surprising how poor an ore of copper may be profitably mined. Mr. Allan, speaking of one of the Cornwall ores, observes: "Though copper pyrites occurs in vast profusion, it is by no means a rich ore; what is picked for sale at Redruth rarely yielding twelve, generally only seven or eight, and occasionally as little as three or four per cent. of metal. In the latter case, such poverty of ore is only made up by its facility of transport, the moderate expense of fuel, or the convenience of smelting." The copper slate of Mansfeldt, which has long been celebrated for its copper-mines, is also a remarkable instance of this. Here there has long been pursued a scientific system of mining; "and such," says Dr. Ure, "is the influence of a wise administration on the economy of mines, that the thin layer of slate in this formation, of which 100 lbs. commonly contain but 1½ lb. of copper—occasionally argentiferous—has been for several centuries the object of smelting works of the greatest importance to the territory of Mansfeldt and the adjoining country. The frequent derangement which this metallic deposit experienced, led skilful directors of the underground operations, at an early period, to study the superposition of the accompanying rocks. From their observations, there resulted a system of facts, which have served to guide miners, not only in the country of Mansfeldt, but over a great portion of Germany, and in several other countries where the same series of rocks occur."

Copper ores are abundant in Sweden, Russia, Persia, Japan, Cuba, Chili, Colombia, Australia, and many other countries, where, however, mining is not pursued to a large extent. Some of the mines in Cuba were worked in the seventeenth century by Spanish adventurers, but were subsequently abandoned by them. They have only recently been reopened, and were found to be of great value. In Sweden, the celebrated copper-mine, in the province of Dalecarlia, is supposed to have been wrought for 1,000 years; and Gmelin, the celebrated German chemist, has traced the remains of mines on the southern and eastern borders of the Ural mountains, which, it is conjectured, must have been the work of a nomadic people, ages before the conquest of Siberia by the Tartars.

The mechanical treatment of the ore at the mine, preparatory to its sale, is effected in a variety of different ways. It may receive a first sorting either in the mine or at its mouth. It is first separated into small pieces, and then picked, or sorted, into heaps of relative richness by children, who soon become surprisingly expert in the selection. It is then pounded, crushed, washed, separated as much as possible from impurities, and finally sampled and sold by public ticketing to the smelters. This last transaction has continued to exist in Cornwall, without change, for upwards of 100 years. The sales of the ores take place weekly, at one of the principal hotels in Truro, Redruth, or Poole. Samples of the different lots are procured by the buyers' agents—and every copper-smelter has such a functionary constantly in Cornwall—who, on the day of sale, attend and produce their offers. On these ticketing-days, dinners are or used to be given, like City feasts, to the purchasers, at the expense of the mine.

Copper is distinguished from all other metals by its beautiful and characteristic red colour. This fact could not have been stated so explicitly some years ago; for the metallic substance known as Titanium, long classed by chemists as a pure metal, was also possessed of a splendid red colour. But Wöhler has since shown this substance to be a compound. Copper is frequently met with in nature, sometimes beautifully crystallized. In Siberia and the Faröe Islands, arborescent groups of native copper are disseminated throughout the amygdaloidal rocks of these districts. It has also been found in Cornwall; and in the red sandstone region of the United States it exists in fine crystalline masses. But the largest specimens of native copper known to exist have been found in the district of Lake Superior. One remarkable mass, recently discovered there, has been estimated to weigh upwards of eighty tons.

Mineralogists know of about forty different minerals containing copper. Of these many are associated with sulphur, selenium, arsenic, and antimony; others with oxygen, and chlorine; and carbonates, phosphates, and sulphurets are very frequent in their occurrence. Commercially speaking, the most valuable minerals of copper are copper pyrites—the yellow sulphuret of copper, the blue and green carbonates or malachite; the oxide, phosphate, silicate, and some others. The first of these—the copper pyrites,—is by far the most common ore of copper, and constitutes, indeed, the chief supply of the mines of Cornwall, and those of Mansfeldt. Malachite is a very beautiful mineral. It is found abundantly in Siberia, and some localities in the north of Europe; and an almost inexhaustible field seems to exist in the copper districts of Australia. It admits of a high polish; and when large enough is cut into vases, loo-tables, and other ornaments. The beautiful and costly malachite doors, from Russia, in the Great Exhibition,—which were purchased by Mr. Hope at an enormous expense,—must be fresh in the recollection of our readers. The Museum at St. Petersburg contains a *monstre* block of this mineral, weighing upwards of forty tons, and valued at 20,000*l.* The phosphate, and some others of the copper ores, are likewise very beautiful minerals.

Indeed, the characteristic feature of copper and its minerals is that of extreme beauty. The salts of the metal are especially remarkable for the delicacy of their blue and green colours. Blue vitriol is a "gorgeous azure;" and the sulphate or nitrate of copper with ammonia constitutes the fine blue coloured solution through which the chemist loves to transmit the rays of his gas-lamp. The alchemists of old were so alive to the rare beauties of this metal, that they called it after the planet Venus; and this signified, in their fantastical creed, the essence of everything that was beautiful and fair to look upon. Some salts of copper are employed in the arts as pigments. The neutral acetate of copper, the sub-acetate, or common verdigris, and the Schwienfurt or Vienna green—a combination of copper, arsenic, and acetic acid—constitute the splendid mineral greens of commerce. All these compounds of copper are poisonous: the verdigris which forms on copper cooking utensils is dangerously so. On that account, copper should never under almost any circumstances be employed for this purpose, particularly when brought into contact with substances containing fat or vegetable acids, in which case a peculiar and most energetic chemical action occurs to produce the poison.

ARCHITECTURAL COMPETITIONS AND SPECULATIVE BUILDING: THEIR EVILS AND REMEDIES.

I THINK these subjects are closely connected: certainly they are allied in a money point of view.

First, with regard to competitions.

"We call it a society," says Carlyle, "and go about professing openly the best separation—isolation. Our life is not a mutual helpfulness; but rather, cloaked under due laws of war, named 'fair competition,' and so forth, it is a mutual hostility."* How true is this respecting architectural competitions! Few occur but what the competitors quarrel with the judges, being, at the same time, so jealous of one another, that they have never been able to settle the proper regulations. The judges, also, are often at war,—two factions contending for the mastery. And "*fair* competition;"—who does not fear the uselessness of sending in, without having a friend on the committee? Then, again, more especially with reference to recent Government competitions, the barracks and public offices, principles of equity are totally disregarded. True, the merits of some of the competitors were acknowledged; true, the premiums were paid; true, few architects would have made any drawings were it not for the implied condition that the successful competitor should be employed; but true it also is "We have profoundly forgotten that cash payment is not the sole relation of human beings: we think, nothing doubting, that it absolves and liquidates all engagements of man. . . . Did I not hire them fairly in the market? Did I not pay them, to the last sixpence, the sum covenanted for? What have I to do with them more?"*

Then there is the reprehensible proceeding of men setting themselves up as judges, while quite unfit for the office, for few competitions have taken place in modern days in which the judges were qualified to decide. Were they familiar with the principles of art; acquainted with its true scope; unwedded to false systems; able to separate in a design what is the designer's own from what belongs to others; and that which is appropriate to the present age from that which was suitable only to races long since passed away? For mark, the judges should have all the above qualifications. How was it in ancient times? Winckelmann observes of the Greeks, "The reputation and success of artists were not dependent upon the caprice of ignorance and arrogance, nor were their works fashioned to suit the wretched taste or the incompetent eye of a judge set up by flattery and fawning; but the *wisest of the whole nation*, in the assembly of united Greece, passed judgment upon and rewarded them and their works; and at Delphos, as well as at Corinth, contests in painting, for which judges were specially appointed, were instituted in the time of Phidias."† So Fergusson remarks, "Had Pericles and Leo X. not been as familiar with the processes and exigencies of art as any of those that surrounded them, and had the artists of their day not been gentlemen in feeling and education, and treated as such, the arts of their respective ages would never have risen to the elevation that marks them." Now, as the same author continues, "In almost every competition that has taken place for a public monument, it has, either from ignorance or unfairness on the part of the judges, degenerated into a job; and no man of gentlemanly feelings could subject himself to the trickery and chicanery that are requisite to get a design accepted. If he did so, he would soon cease to be either a gentleman or true artist; and although those in the humbler walks of art can, in the mass of the public, secure some patrons, they must descend to their level, and flatter their feelings and prejudices to secure a verdict in their favour and a remunerating price for their works, for it comes to that after all."‡ We have lighted on the brilliant discovery that, because a man is a peer, a millionaire, a member of Parliament, or of the parish vestry, he is qualified to decide momentous questions of art, and to pronounce what rewards are to be assigned to those who have devoted their lives to the subject. It may be said that people who pay ought to have a voice in the matter. The question, however, is, whether they want the best that can be had for the money, and are competent to choose for themselves.

Looking at competitions with purely monetary considerations, the present system is founded on gross injustice. Whatever certain benefits there *may* be rests with the public; the consequence of this ignorement of the true artist's certainty of reward being that the public rarely, if ever, receive any real and lasting benefit. The individual artist has only a *chance* of remuneration; while numbers of meritorious practitioners are *sure* to lose their time. There is also the erroneous supposition that architects are men of fortune; the members of other callings not being presumed to have that leisure which competence gives, enabling them to devote their time and money to a given purpose, with only a probability of remuneration: they will not *gamble*.

Speaking of the competition for barracks, the *Builder* justly observed:—"There were 114 sets of drawings; and if we take 50*l.* per set, which will be a low figure, the account will stand as follows:—

---

* Some years ago, a party of Cambridge philosophers undertook, for a scientific object, to penetrate into the vasty depths of this mine. The venerable Professor Farrah, who made one of the number, used to relate with infinite gusto the following startling incident of his visit. On his ascent in the ordinary manner, by means of the bucket, and with a miner for a fellow-passenger, he perceived, as he thought, certain unmistakable symptoms of frailty in the rope. "How often do you change your ropes, my good man?" he inquired when about half way from the bottom of the awful abyss."—"We change them every three months, sir," replied the man in the bucket; "and we shall change this one to-morrow, *if we get up safe!*"

* "Past and Present."

* Ibid.

† "The History of Ancient Art among the Greeks."

‡ "An Historical Inquiry into the True Principles of Beauty in Art."

114 sets of barrack plans at 50*l.* per set..	£5,700	0	0
Premiums paid for same	600	0	0
	£5,100	0	0

In other words, the architects who have entered into competition *give* 5,100*l.* to the country, exclusive of professional knowledge. And this sum of 50*l.* does not represent more than one-third the actual money-cost paid to assistants for some single sets of plans."* The Government retained the whole of the designs, whether premiated or not.

None who refer to the premiums usually offered can be surprised that competitions fail to elicit worthy results. It may be stated, as a general rule, that no one has the slightest conception of the data on which these premiums are fixed. We find one fortunate architect actually getting 5*l.* for a design for a church. The committee of the Mechanics' Institute, at Alford, asked for designs for a building to cost 500*l.*, offering three premiums of two guineas, one guinea, and half a guinea. For laying out, &c., four acres, on which a dwelling-house, a lodge, offices, and stables were to be erected, and providing a specification and estimate, "a 10*l. prize*" was advertised; with, however, the advantage of inspecting a plan by the talented and munificent proprietors. The guardians of the Blandford Union required a workhouse for 250 inmates, "the drawer of the plan" to receive 10*l.*, "provided that he should not afterward become the *contractor* for the work." These are not solitary, but common instances of the parsimony and ignorance of people; who, nevertheless, find architects too degraded, or too poor, not to spurn their offers: nay, they are often willing to pay for particulars.†

As to the time allowed, the present manufacturing system has led to the idea that architects can produce elaborate results at the slightest notice. Mature thoughts, originality of conception, and truthfulness, are not, however, now required; and an architect would lose all chance of success by doing what *he* judges best, instead of ascertaining what is most likely to please a committee, who know little or nothing of the subject. When Michelangelo was asked by Julius II. to design his sepulchral monument, he brooded over the subject for months, without touching a line; but the result was worthy alike of the artist and of the pontiff.

These, then, are the evils of competitions. The judges are usually incompetent; being no more qualified to give an opinion on art than on the technicalities of a lawyer's or doctor's vocation. Impartiality is rarely observed, it being continually settled beforehand who is to do the work, which is sometimes put into the hands of a favourite *protégé*, instructed to gather what there is of value in the competitors' productions. Numbers throw away their time, in order that one may have a *chance* of employment. Leading architects will not compete, unless for an extensive production, or the competition is limited. The premiums are nearly always inadequate, considering the risk of total loss, and sufficient time is rarely allowed. For a single case in which the best design is carried out, in fifty, one of the worst is adopted. Altogether, the system, as now practised, is unsuited to the present constitution of society.

How is it to be reformed? The celebrated competition for the execution of the gates of the Baptistery at Florence teaches a valuable lesson to artists and to the public. "From amongst a great number, seven were selected by the *consoli* as worthy to compete for the work, upon terms not merely just but munificent. Each competitor received, besides his expenses, a *fair indemnity for his labour for one year (the time for competition). . . . There were thirty-four judges, principally artists*, some natives of Florence, others strangers: each was obliged *to give his vote in public*, and to state at the same time the *reasons by which his vote was justified*." The works of Brunelleschi, Donatello, and Ghiberti being selected from the rest, "the suffrages seemed divided; but, after a short pause, and the exchange of a few whispered words, Brunelleschi and Donatello withdrew, generously agreeing and proclaiming aloud that Lorenzo had excelled them all, that to him alone belonged the prize; and this judgment, as honourable to themselves as their rival, was confirmed amid the acclamations of the assembly. . . . The great artist was not hurried into carelessness by their impatience or his own; nor did he contract to finish it, like a blacksmith's job, in a given time. He set about it with all due gravity and consideration, yet, as he describes his own feelings, 'with infinite diligence and infinite love.' He began his designs and models in 1402, and in *twenty-two years* from that time—that is, in 1424, the gate was finished. . . . Such was the glory which this great work conferred, not only on Lorenzo himself, but the whole city of Florence, that he was regarded as a public benefactor."* I know it will be long before these suggestions can be adopted. There are too many important committee and vestry men in the way; very estimable in their counting-houses and shops, but who would feel insulted not to be able to help their friends.

Next, with respect to the system of "speculative building," *i.e.*, building not for convenience, durability, and beauty, but to obtain the utmost amount of money, in, oftentimes, the most unprincipled manner.†

In England, says Hassenfratz, writing in 1804, "*Il est rare qu'on achète le terrain où l'on veut bâtir; mais on l'engage pour* 20, 30, 40 *ans, et on paie une rente; cet article seul est une grande économie de capitaux; et quoque au bout du term prescrit les édifices reviennent au propriétaire du terrain, l'art de bâtir pour un temps déterminé a été si perfectionné qu'il est rare que le propriétaire en retire le moindre avantage.*"‡ Rare method, by which the interests of freeholders and builders are rendered so perfectly antagonistic! But who is really benefited? Not the freeholder; not, certainly, the occupants of such houses; and, as to the enterprising, speculating builders, ruin commonly overtakes the most astute.

Happily our Continental neighbours have avoided a system which goes far to account for those long rows of ugly houses,—one propping up the other,—with rectangular holes for windows, *flat* arches, settlements in all directions, and not the slightest aim to beauty, except, perhaps, by means of flimsy cement work, "hiding with ornament the want of art," and which are peculiar to a country where it does not *pay* to build otherwise than for a very limited time. So long as the English public are content to live in houses run instead of built up; so long as people consent to build on leasehold, instead of freehold ground, and encourage "tendering" for work, in place of measuring it when done, and paying fair and current prices; and so long as competent and honourable professional men are excluded from the supervision of builders, so long shall we continue to have houses as they now are, but not as they ought to be.

EDWARD L. TARBUCK.

* The *Builder*, No. 690.

† Compare the *Builder*, Nos. 638, 683, 689.

* Mrs. Jameson's "Lives of the Italian Painters."

† "In an account of a bankrupt's final examination, recently published, it appears the petitioning creditor, who was the mortgagee of nearly all the bankrupt's property, had agreed to lease some land to the bankrupt, had induced him to expend 4,000*l.* of his own money on it, to get largely into debt in covering the land, and had proposed to the bankrupt to assign the whole of his property to him, and then to go through the Bankruptcy Court, promising him, after he should have obtained his certificate, to give him 1,000*l.* to 'begin again' with."—*The Builder*, no. 710.

‡ "Traité de l'Art du Charpentier."

THE SERPENTINE BLUNDER.

THE Select Committee, as we last week stated would be the case, have reported against the mistaken course that has been adopted, and on which thousands have already been wasted. After describing the condition of the Serpentine as given to them in evidence, the various plans at different times submitted, and the arguments used in support of the course adopted, the report thus concludes:—

"If a supply of fresh water sufficient not only to replace the waste, but to provide for a continual change, were impossible to be obtained, in the absence of another alternative, filtration might be justifiable; but your committee believe that such a supply of fresh water may be obtained from the springs within or contiguous to the Serpentine, from an enlargement of the water-shed of the park and Kensington-gardens, and from other sources which have been pointed out to the committee. Some of this supply may be obtained by means of simple gravitation, at a small expense.

Conflicting evidence has been given as to the quantity and quality of the water that can be pumped from the well in Duck Island, but Mr. Hawksley states in his evidence that he entertains no doubt that a considerable supply of water can be procured in the neighbourhood of his works, and that an increased amount of water could be drawn into the Serpentine by an extension of the surface drainage of the park and Kensington-gardens.

We have had, however, a more embarrassing task than to decide merely whether Mr. Hawksley's plan is the best for effectualy cleansing the Serpentine. We have had to consider whether that plan, recommended by great engineering authority, adopted by the Executive Government, sanctioned by Parliament, and nearly approaching its completion, is so unsatisfactory in its object and means that it ought to be arrested, even in its present stage of advancement, and the work which has been performed diverted to other purposes. After much patient investigation, we have arrived reluctantly at the conclusion that the proposed filtration will not be effectual for the desired object, and that this cleansing process ought not to be carried on in one of the most beautiful spots of Kensington-gardens. We recommend, therefore, that the project of filtration be abandoned, and that the best available supply of fresh water be poured in to such an extent as to produce some continual flow.

Whenever the Metropolitan Board have completed their works for the diversion of sewage from the Serpentine, measures should be taken for rendering the bed of the lake clean and hard. We have not come to any conclusion as to the extent to which the mud ought to be removed, hardened, or covered, nor as to the relative merits of gravel or concrete as a covering, nor as to the expediency of burning it, nor as to the depth which would best promote the convenience and safety of bathers and skaters, and the purity of the water; but we are of opinion that the present condition of the bed of the Serpentine absolutely requires amendment."

Of course it must not end here. Having got out of the wrong road, the Government must now at once get into the right one.

ARCHITECTURAL INSTITUTE OF SCOTLAND.

AT a meeting of the Architectural Institute of Scotland, in George-street Hall, Edinburgh, on the evening of the 2nd day of April, the report of the council upon the drawings sent in, in competition for the prizes offered by the Institute, was read, and the prizes were delivered to the successful competitors, viz.:—

1. For the best geometrical drawing.

Medal.—Alexander C. Beattie, apprentice to Mr. David M'Gibbon, architect, Edinburgh.

Second Prize.—Thomas Bryson, apprentice to Messrs. Peddie & Kinnear, architects, Edinburgh.

2. For the best series of drawings of architectural details, measured and drawn from the originals.

Medal.—Francis D. G. Stanley, apprentice to Messrs. Brown & Wardrop, architects, Edinburgh.

3. For the best original design: Subject—an ornamental public fountain.

Medal.—John Alexander Hamilton, apprentice to Mr. David Rhind, architect, Edinburgh.

4. For the best model in clay of an architectural ornament, being an original design.

——.—George M'Callum, apprentice to Mr. William Brodie, R.S.A.

Afterwards a paper was read "On the Domestic Architecture of Italy and France during the Middle Ages, and the period of the Renaissance," illustrated by drawings, by Mr. Robert Anderson, architect, Edinburgh.

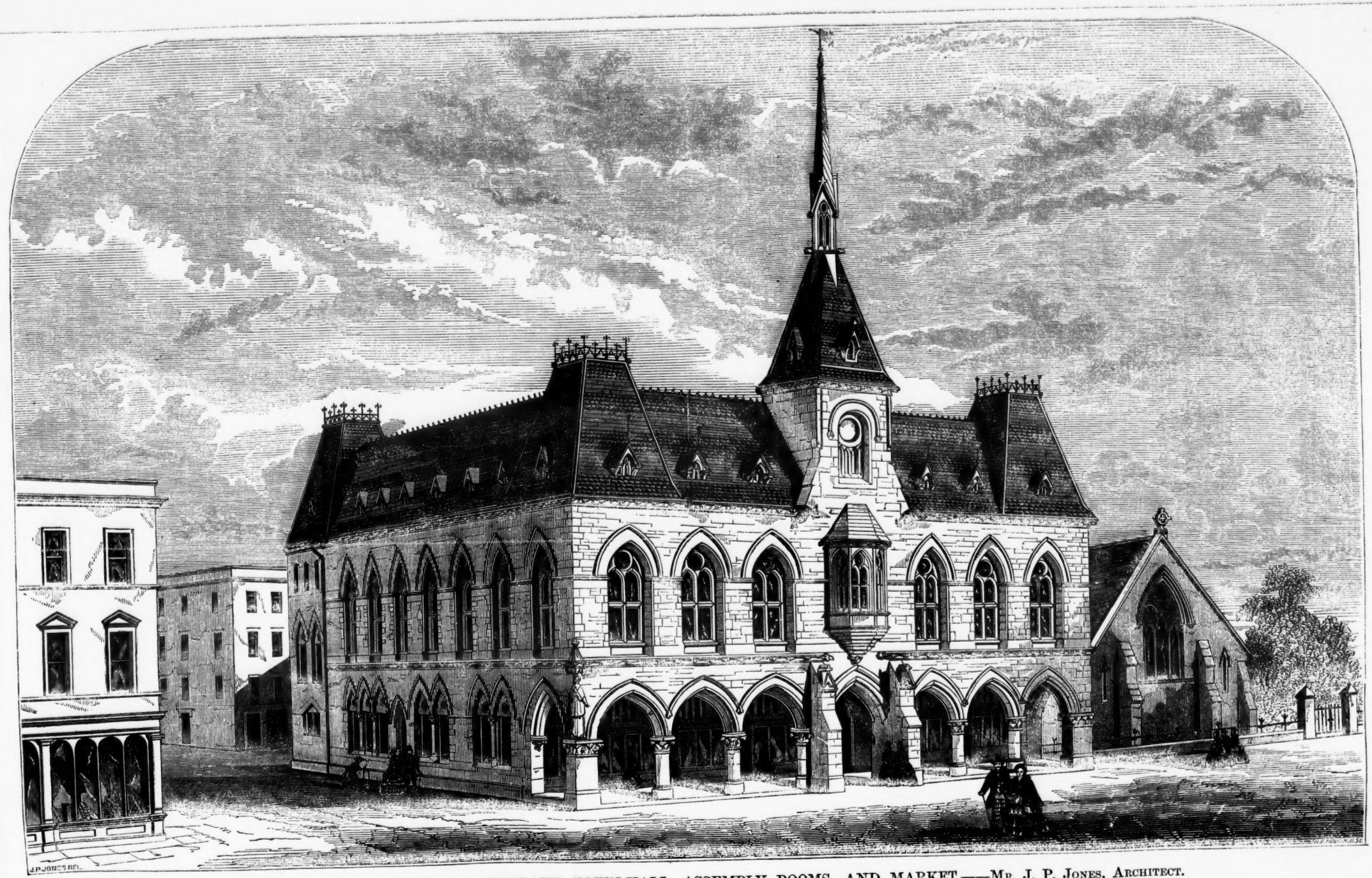
BISHOP AUCKLAND TOWN HALL, ASSEMBLY ROOMS, AND MARKETS.

WE have already mentioned that the first premium offered for the best design for Town-hall, Assembly-rooms, and Markets for Bishop Auckland, Durham, was awarded to Mr. J. P. Jones. The accompanying engraving illustrates the selected design.

On the ground-floor is placed a large room for Mechanics' Institute, with ante-room, news-room, offices for Town-hall Company, and Board of Health. These are approached from the entrances at the side facing north. On the west, a principal front, under the arcade are shops, with living-rooms over; and in the centre of this front is the principal entrance to the covered market, and also to the Assembly-room, over the rooms above mentioned. The market is in the rear of the front building, and open to the roof, with a gallery for butter, poultry, and other dairy produce, the butchers' stalls being on the ground-floor. The gallery and the roof are to be constructed of iron, and the whole of the roof is to be covered with glass; the spandril of arches to be filled in with ornamental scroll-work, and coloured in blue and white. There are three entrances to the market, one for the north, west, and east, leading into three different streets.

On the first floor is the large assembly-room, 86 feet by 40 feet, with vaulted ceiling, divided into compartments by moulded ribs, resting on foliated capitals and shafts, the whole to be decorated with colour. At the end is a recess for an orchestra and organ. The assembly-room is approached by two large staircases, one at each end of hall, 20 feet square. A smaller public room is attached to the larger one, facing the west, or principal front. Retiring-rooms are also provided, 35 feet by 30 feet, with coved ceiling.

On the south side is a Gothic chapel, so that it was thought best to design the building so as not to interfere with it by placing an Italian building close to it. The architect sent in both a Classic and a Gothic design, and the directors, on his recommendation, adopted the Gothic as most suitable: it also afforded the best accommodation, it is stated, and was the most economical; effect being aimed at by outline alone. The stone of the neighbourhood is the material indicated for the buildings.



SELECTED DESIGN FOR BISHOP-AUCKLAND TOWN-HALL, ASSEMBLY ROOMS, AND MARKET.——Mr. J. P. Jones, Architect.

THE UNION OF ARCHITECTURE AND SCULPTURE.*

HAVING touched cursorily on some phases of the union of sculpture and architecture in the ancient days of the Egyptians, Assyrians, Greeks, and Romans, I will proceed to those of modern days, in which, however, my space will restrict me to a still less adequate mention. But I would, previously, make a few remarks on some principles which arise practically in the union of sculpture with architecture.

The geometric decorator, or sculptor of decoration, as distinguished from the sculptor on statuary proper, of the human figure, is well aware, when he has to fill a space in harmony with the surrounding features, that he must set out with selecting a geometric skeleton of just device, or scheme of general guiding lines, on which to construct his composition. I do not, however, notice that this principle is always equally or adequately recognized in the profession of sculpture proper—in which, nevertheless, it is equally essential to good effects.

In the arrangement, for instance, of the sculpture for a Classic tympanum, this consideration, after the choice of the subject, has the first claim for attention. In this case of the tympanum, no scheme of general arrangement, perhaps, is preferable to that of the circle in the centre, pretty nearly tangent to the base line, and to the apex of the roof, and then flowing off in waving and harmonious lines towards either end. On this the composition would be constructed decoratively, like foliage or conventional forms, as regards balance and play of line, and yet informed with the variety of human form and vital action. I would, however, by no means intimate that this especial scheme of guiding lines, of a circle in the centre, with lines waving off on each side, is the only one suitable to the sculpture of a tympanum. On the contrary, I merely put it forward as *one* of which the effect is harmonious, and consonant with the spirit of the space it occupies—as thus:—

The mission of a roof is to cover over, as it is the mission of the pillars beneath to support. Thus the pillars, with their flutings, are upright. The tympanum, on the other hand, is the gable of the roof, and shows its spread, and therefore the forms which occupy it should partake of the same spreading character in their composition and arrangement; and this is another reason, besides that of the evil effects of continuing the pillar lines upward, as we have good reason to accept was the case with the sculpture of the tympana of the Parthenon.

Also within the square spaces of the metopes, the Parthenon treatment affords examples of a perfect harmony between the groups as sculpture and their decorative effects as regard the architecture.

The frieze also encompassed the temple beneath the colonnade with a zone of perfect architectural decoration, at the same time that it is unsurpassed as relievo sculpture.

In all these several cases there is no compromise. The two arts moved on hand in hand with perfect ease and pleasantness, like two young and loving sisters.

I will now say a few words as to statues and groups in "the round," in their connection with architecture.

By statues and groups in the round, I mean those intended to stand by themselves and apart, in contradistinction to those in relievo, which are attached to a background, or those statues which, being arranged as in a tympanum, partake of the nature of relievi.

All such statues as I speak of now, as in the round and apart, may be regarded as finials on architectural forms. One of the most common of these finials is the vase, both in direct connection with architecture, and also in gardens of geometric plan.

Vases are of various proportions: some of these are tall, and some wide, which fits them respectively for different situations.

Now we shall find that various of the best statues, in different attitudes, afford these vaselike contours.

Let us instance as one example the far-famed Venus de Medicis. This, in the principal view, as regards general arrangement, takes the contour of a long ovate or egg-like form, with a top and base—or in other words, that of a tall vase.

From this we may turn to its antipodes in human form—the Eracles of Glycon—or as it is commonly called—the Farnese Hercules. This also is of a geometric contour, somewhat like a cone, but still like a vase, only wider at the foot than the Venus, so as to give the look of greater stability.

Both these statues, diverse as they are in character, may be considered architectonically as having a common quality—as being both statuesque vases, or vaselike statues; and this quality no doubt had a large part in obtaining for them that wide popularity which they have ever enjoyed. In ancient art they were more repeated than any other statues, greatly no doubt because they came in so comfortably as finials and architectural enhancements on pedestals. It may be well for us sculptors to recollect this when designing a figure, that a pleasant geometric contour is one passport to fame.

In modern art, the well-known group of the Rape of the Sabines, by John of Bologna, yields a good instance of a vase-like form with a serpentine line of decoration round it, like a vase with a wreath of flowers.

As regards, however, tall vase-like forms produced by sculpture proper, perhaps no better example exists among ancient or modern works than the well-known classic group of Cupid and Psyche. You may turn it round in all directions, and yet in each does it preserve that taper, vase-like contour which renders it so elegant a finial, and so apt as an architectural enhancement, and this without trammelling or fettering its grace and action.

So much for tall, taper, statuesque vase-forms: now in regard to wide ones. This character of form, often highly desirable in connection with architecture, is most generally gained in sculpture by seated statues. The Lorenzo de Medici, by Michelangelo, affords a fine example of this. Also the beautiful work of the First Cradle, by De Bay.

Another of the most important and valuable geometric forms for sculpture is the pyramid, instanced in the Laocoon, the Niobe, &c., and also in groups on the summit of triumphal arches, which should be somewhat of the tympanum form of group, freed from the bounding architectural lines at the top. This was attained in Roman art by a group of a car and four horses, and the general or imperator standing super-eminent in the centre; as also is supposed to have been the case with the monument of Mausolus—the statue of that king there occupying the car.

A great deal more remains to be said on this subject, for which I have not space now. However, it may be safely accepted, even as regards sculpture *per se*, that a statue is ever the better for geometric symmetry of composition, and far more useful architecturally.

I have already, as you have recognized, brought in one or two modern instances to assist as illustrations of the general question; nevertheless, take it altogether, dating from the time after Constantine, modern art has not been so thorough-going in the union of the arts as in previous periods. The brevity therefore forced on me by my short remaining time will be the more excused in treating the question in more modern days.

The monstrous abuses of the late Roman Empire especially, brought vast discredit upon statues, and in the fourth and fifth centuries, there arose in the Greek Church, a sect of enthusiasts, called emphatically, Iconoclasts, or Image-breakers, from "eikon," an image, and "klao," to break, who, founding their indignation upon a false reading of Scripture, went about smashing every statue they could lay their hands on, and of course did not have any made. These, therefore, as you may conceive, were not very good times for sculptors, whose profession, for some centuries, was depressed in consequence. Eventually, however, the intellect of Europe saw through the falsities of these ideas, and sculpture arose and attained great perfection in the Italian school.

The Mohammedan portion of those who lit their "lamp of architecture" at the shrine of Byzantium, never got over their prejudices. Their prophet had told them they could make no statues except under the penalty of having to find souls for them at the day of judgment, a sufficiently ludicrous dogma, as you will agree; yet, nevertheless, one which has proved sufficient to frighten sculpture out of Islam to this day.

Pope's well-known line, however,—

"The noblest study of mankind is man,"

is especially applicable to art, and assuredly no style of architecture can be of the highest rank which does not amicably and cordially unite with painting and sculpture of the human form. Thus the Mohammedan and Saracenic styles which ignored it altogether on principle, can never, in dignity and expression, take rank beside those which welcome it in the fullest degree, as the Greek and Italian.

Byzantine architecture was not much enhanced with sculpture originally, because of the prejudice I have already mentioned; nevertheless, our own grand and broad Saxon and Norman style, with round arches, like Durham Cathedral, which is an offspring of that style of the early church we call Byzantine,—this style is, I conceive, full of undeveloped harmony, with the highest class of painting and sculpture. It is simple, grand, free, stable, and Anglo-Saxon, and offers a large scope to combined art.

Having now no time for the just consideration of the Italian combination of the arts, we will proceed to Gothic,—that exquisite, varied, and picturesque style, so dear to landscape, which, when produced with most felicity, seems more like coral spires and stalactite caves, wrought by gnomes and fairies, than the work of men's hands, and which has enriched modern Europe with so many picturesque and charming compositions. Elegant picturesqueness is indeed its great characteristic; and this is by no means confined to its youth and freshness, but is at least equally striking in its age and decay. One loves, indeed, Gothic in all her phases,—in her crystalline completeness, and in the gray ruin; in her long, fretted vaults, tremulous with music, and streaming with rainbow tints from her storied windows, and in the mouldered fane, bedecked with ivy and wild grass, and mute, save the voice of the owl.

Also we may proudly say, that no country surpasses these isles in the beauty of Gothic architecture. Yet we must not, when it is tested by a question such as this of to-night, allow our enthusiasm to run away with us.

This style has received great accession of force of late by having been adopted by various men of great talent of this day, and adopted exclusively, yet we must not allow this exclusiveness to carry us too far. Gothic has its great and varied beauties; yet, as it is, and as it has existed, up to the present time, it has also its great shortcomings.

When a question like this, of the union of the arts, comes before us, so important to their advance in this country, it is essential to treat it openly and without reserve, and it were duplicity on my part, invited as I have been by the Architectural Committee, to treat the subject, if I were to belie my convictions, or shrink from expressing them, even if what I say may not in all quarters be acceptable.

The whole course of our argument teaches us the propriety of the union of the arts. Do we not all believe that they should meet and be a mutual aid like sisters? For my own part I believe in the perfect harmony of the arts on the same level, and as a direct consequence, that no style of architecture cannot be of the highest class, unless it will unite cordially with the highest class of painting and sculpture.

I believe the different arts thus afford a mutual test of excellence, and that the proof of high excellence existing among them, is when they are perfectly free and unrestrained in each other's company. Now comes the important question,—can Gothic architecture offer this unconstrained welcome to the sister arts? or, in other words, "Is Gothic architecture in harmony with the highest class of painting and sculpture?"

This special question has been pretty well winnowed during the latter part of the year in an architectural periodical. On September the 9th, I first asked this question in the terms I have just used.

The result of this was, I understand, a variety of correspondence, for not one-half of which the Journal could find room.

If it may be alleged that judgment was allowed to go by default, I could not help that. For my own part I had simply gone on asking my original question in various ways,—"Is Gothic architecture in harmony with the highest class of painting and sculpture?"

At first there was some indignation expressed at my asking such a question at all, and it was replied to, point-blank, that Gothic architecture *was* in perfect harmony with the highest class of painting and sculpture! Examples, however, seemed to fail on investigation, and a retreat was sounded into Upper Italy; among examples, however, in which it was evident that neither the painting, sculpture, nor architecture was of the highest class.

Some of the instances attempted to be brought in answer to my question were peculiarly unfortunate, as those of the Angels of the Lincoln spandrils, which were, as sculpture, highly lauded, until it was known there were casts here in the Architectural Museum open to the close view of the public, when we heard no more about them.

That there are some fine examples of Mediæval Gothic sculpture is undoubted, and this is especially the case with recumbent figures on tombs, which by being less closely connected with the structure, are less constrained by it.

Also it must be acknowledged that the earlier and simpler styles of Gothic are more favourable to the introduction of high art than those which are most elaborate. Yet it is equally certain, and without going into details, I am sure it will be allowed, that there are no specimens of Gothic sculpture at all equal to the sculpture which grew up in connexion with the art of other styles,—as the Greek, Roman, and Italian. Now, what is the occasion of this? I do not think it difficult to reply.

In these styles—Greek, Roman, and Italian, architecture is a "Lady Bountiful" in her hospitality to her relations. "Come in," she says, "my dears; make yourselves quite at home; do as you like; sit here; stand there; do not stand upon ceremony; be quite unconstrained; the house is your own; follow your own inspirations." This is what architecture says on welcoming her sisters at the door of her Roman, Italian, or Inigo Jones's mansion. But it is a very different thing at the door of her Gothic house; her note is quite changed then. Then it is, "I am very glad to see you indeed; but you must behave yourselves; you must be staid and demure; you must stand *so* in a niche; or you must bend your neck so to accommodate an arch; and you must be highly preRaffaellite and even on gold grounds if you wish to be *quite* in the way of the house. And you (speaking to Sculpture) must be Early English and architectonic, which is pretty nearly the same as saying you must be constrained, archaic, and unnatural.

Indeed, as a general rule, it may be said, that in the purest, most characteristic, and most thorough development of Gothic, the paintings go into the windows and the sculpture into the niches, where the one is transparent and the other in durance; and where, in consequence, instead of vital and individualized works, they become only secondary,—not on a level with the architecture, but quaint, cramped, and conventional.

Even with a recollection of various of the sculptures of the Cathedrals of Wells, Lincoln, Ely, and Westminster, I think I must acknowledge that the best examples of Gothic sculpture I know, are modern. Those of Geerts of Louvain, but a few years deceased, various of the casts of whose excellent works were at the Crystal Palace at Sydenham, and are now at Stockport, some of which, especially as I love fairness, and that both sides should have their best illustrations, I have been lately attempting, although as yet, I regret to say, in vain, to get up a subscription and buy for the Museum.

These works, however, excellent as they are in spite of difficulties, most clearly evidence and illustrate the efforts of a great genius working under trammels, which will ever be the case while Gothic continues what it is, and sculpture tries to work to its phase.

This is a blot on the escutcheon of Gothic, and it behoves the Gothicists to strive to wipe it out. Much as I admire Gothic architecture, I do not hesitate to affirm that if that style, as at present constituted, were to come in anything like exclusively,—for, mind you, it is only its exclusiveness I object to,—into use in this country, it would be to the vast and direct disadvantage of the higher qualities of the sister arts. It behoves all art-lovers of extended views to regard this attentively, and the architect and artists especially to look to it.

The adoption of the Gothic style—now many years ago—for the new Houses of Parliament, admirable as a work of genius as that elaborate structure is, has already been of great injury to art. How different would have been the results to painting and sculpture had those houses been, instead, of some broad, simple, enduring style, like that of Inigo Jones or Sir Christopher Wren, whose styles quite as much belong to this country as any other style, and the elements of which are the common heritage of man, especially of European man. How far nobler and more congenial would then have been the scope afforded to the sister arts!

I am telling a truth,—a truth which finds its response, I believe, in the mind of every painter and sculptor who has worked for that building, which, in its way, nevertheless, is one of the finest in the world. I believe I am correct in saying that the architect himself is not answerable for the adoption of the style, but that it was imposed on him.

But now let us take another and a more agreeable phase of this subject in considering, merely for the time, what might be the best for the interests of Gothic, *per se*.

We have heard much of late of a new Victorian style of Gothic, which is to be, of this, the nineteenth century, fresh, new, and which is to surpass all others. The prospect is pleasant, hopeful, and inspiring, and in regard to it I would venture to submit a proposition—whether there could be a better clue towards originality than that which Gothic has never as yet thought it worth while to trouble herself about, viz., the seeing if she cannot be thoroughly fair, and liberal, and cordial to her sisters?

I would, indeed, take this opportunity of again putting publicly this important question to the art lovers and workers of Britain. If Gothic architecture is at the present day really to advance, would not one of the best inspirations of her fresh career be to try and see whether she cannot welcome and foster the highest development of the sister arts with the same perfect freedom, scope, open-heartedness, and cordiality, as the styles of Greece, Rome, and Italy have already done? For then, and not till then, do I conceive, will she prove herself to be of the highest class of her own art.

There is one other point to which I wish to call attention before I conclude. A point also, I conceive, of great importance to the progress of the arts considered in its broadest view—that of their union: I mean that of a universal Museum of Architecture.

This may, from its wideness, appear at first a vague term, but I will explain what I mean. I mean by it a museum in which should be set forth clearly how man has built in all ages and climes.

This might be well effected by means of a collection and exhibition, on a grand scale, of drawings and models of completed edifices, arranged sectionally and chronologically, beginning with Egyptian, Cyclopean, and so forth, and coming down through all the styles of ancient and modern time, to the present. These should be set forth with suitable explanations and illustrations of the most varied kind as the museum advanced.

It has, fortunately, now become the fashion, and I hope something more, the sentiment and feeling of the people to discuss architecture, its style and meanings, and yet of those who discuss in the drawing-room how small is the portion who could stand even a school-boy examination on its history and details!

* See p. 198, *ante*.

As regards the workman also, what opportunity has he of gaining this knowledge at present? Yet this Universal Museum of Architecture, which I suggest,* would put such information so easily before him that he would be able, within the hour or two he could spare, on one visit to attain, so as to carry away with him a general knowledge of "how"—as I have said, "men have built in all ages and climes."

Thus all classes would be benefited. I have spoken, at various times, myself, to some of all classes nearly, on this subject, and the answers have been all, without exception, to the same effect, that "it was what would be individually most welcome to each person."

Also, it is a great gratification to me to be able to acknowledge here, the ready indulgence that this view received at once from the committee of the Architectural Museum, who have already endorsed it with their distinct approval. Also, I may add, that the Department entertain the proposition with favour. Nothing, however, has as yet been done practically, except as regards the Gothic part of the subject.

But the very soul of the idea, and the value of its realization, exists in its universality, which would rest on the fact of each style of architecture being represented clearly and fully under equal advantages of location and light; and that each style should be illustrated with photographs, &c., of details and examples of such paintings and sculptures and decorations as are proper to each, or copies in small of them, so that the visitor might compare the advantages and qualities and beauties of the different styles fairly and freely.

The history of architecture has been said to be almost the history of the world. It must also be recollected that architecture is, as it were, the very backbone of art, on which so much of its form depends. Painting and sculpture are directly affected by architecture, and even a piece of metal-work or majolica porcelain depends in degree on the time when it was made, and the apartments to which it was to be an adjunct.

Wherever, therefore, this Universal Museum of Architecture be erected, it is evident that it should be in close connection with the arts of painting, sculpture, and decoration, and that art-education to which it will be the best guide.

It is true that the realization of this idea requires space and funds. There is, however, space around to build, if Government and the public would find the funds. [I would desire to say here, by way of parenthesis, that I am in no way connected with the Department of Science and Art, or with the Architectural Museum, and am only speaking as one of the public.] To resume.—True it is also that this idea of a Universal Museum of Architecture is one which has not hitherto been carried out in any other country, and that it remains for Britain to do it first, as she did the first great international Exhibition of the world. Britain is slow to move—proverbially so—yet, when she does move, she generally does things well. I hope this will be the case with the Universal Museum of Architecture.

To conclude: at the commencement of this address I spoke of architecture, painting, and sculpture as having voices. Perhaps it were a closer simile to speak of the former as the symphony, and of the latter as the vocal accompaniment—architecture as the instrumental music, and painting and sculpture as the human voices that accompany it and give it speech. Let there, at any rate be harmony between the arts—if possible on the highest level—but at any rate let there be harmony; and when in presence of a grand triumph of architecture, painting, and sculpture combined, let us regard it, and listen to it, and drink it in, as we do the storied strains of Handel, Haydn, Beethoven, or Mozart—

"Music married to immortal verse."

Nothing at least can illustrate and emphasize better to the true and Catholic love of art, of all the arts the advantage of their Harmony. JOHN BELL.

* Mr. Bell is probably aware that the desirability of such a museum has been long urged in our pages; and even earlier, that is before the foundation of the present Architectural Museum, by Mr. Godwin, in a correspondence with the late Lord Northampton, the desire then being to induce the trustees of the British Museum to commence such a collection. Mr. E. B. Lamb, too, if we recollect rightly, wrote on the subject. The architects who reported to the Government Department of Art, in 1857, took the same view: see their report in our volume for 1859, p. 614.—ED.

THE ORNAMENTAL SCULPTOR, HIS PATRONS, AND THE PUBLIC.

OF all the decorative arts the one with which the people of this country are least acquainted is architectural sculpture. This may appear strange from the fact that there are voluminous specimens in our principal thoroughfares, frowning in dingy blackness on the pedestrians, or climbing in playful grace, inviting the gaze of the curious, but they are not regarded. City gentlemen, in their breathless haste, have no time for works of art. The consequence of this apathy of taste is, that buildings are finished, the carvings executed, criticised and admired by a few concerned, and soon forgotten as things without existence, except by a few of those unknown individuals whose livelihood depends on the production of similar works, who for their own instruction or pleasure stroll occasionally to those spots in their artistic researches.

There are gentlemen who delight in the great masters, talk of the antique, admire exquisite wood carvings, and revel in periods of architecture; who can give you accurate dates of all transitions from the Egyptian through all styles, and who have learned by rote all the changes from the Early Saxon to the fifteenth century, and yet are perfectly ignorant of the works of modern times; men who talk of Grinling Gibbons, and never bestow a glance at the beautiful sculptures of St. Paul's. Then there are architects, professors, and critics, the latter whose business it seems is to find fault with all artists and artistic productions, without imparting instruction to any one. The former, instead of pointing out the faults or beauties of existing modern works, for the information of the public, are continually engaged in controversies on the different styles of architecture,—a subject to which there can be no conclusion unless by annihilation of Gothic or Classic, one having as much right as the other to be used and admired.

In order to make the position of the ornamental sculptor understood, it should be stated that these seeming patrons of art retard the growth of talent by their feeble efforts to promote it. Before our national artists can be made to shine, it must be the province of gentlemen who practise architecture or lecture on sculpture, either by profession or for pleasure, to instruct the public in the practical parts, so that they might better judge; for one-half of the people of this country have not the slightest notion how the works of art in question are produced. There is scarcely a carver who has not in his time been asked, when producing a piece of work, if it can possibly be in the solid, or how the projecting leaves or other ornaments are stuck on.

Even gentlemen of the Architectural Museum, in their laudable desire to promote this branch of art, make great mistakes by being too narrow in their limits, and too much confined in the scope they allow to art-workmen. Instead of teaching him by an elementary process, they should discover his present capabilities, which can easily be done by reference to modern sculptures, such as the Assurance Offices, King-street; the Bristol Bank, and other sculptures recently executed in the City. They may then know that there exist many men with far greater talents than any who have yet competed for prizes at the Museum, and who, if a wider field were open to them, would be glad to contribute specimens of their art which would be worthy so excellent a place of exhibition, and alter the opinion of the public, who take for granted the specimens there to be the best modern art of its class the country can produce. If those gentlemen were to offer prizes for the best pieces of architectural carving, without confining it to any style, period, or subject, there would no doubt be a ready response from a number of men who would submit works of an original and probably superior class.

That there are many horrid abortions amongst the modern works must be granted, but the existence of such works as the carvings at Bedminster Church, Margaret-street Church, Greenwich Catholic Church, Bournmouth Church, new church and other works at Halifax, Ely screen, Shadwell Court, and hosts of other specimens in the metropolis and provinces, go far to prove it is not entirely the fault of the carver (and that at least there are some architects who manage rightly), but the negligence or incapacity of individuals in authority in not putting the work into the hands of real or competent artists. The practice of giving the work to any applicant who will do it cheapest, without requiring a guarantee of his competency, is amongst the grievous wrongs which affect the ornamental sculptors of England. And until architects consider the sculptural portions of their designs important enough to be reserved for their own disposal, instead of connecting them with the builders' contracts, we shall continue to have *masons*, and the drones of the profession, that are only fit to follow and assist, supplanting the legitimate carver, and bringing into disrepute his works, the result of which is a prevailing opinion, that the English are far behind in works of art, and the frequent employment of foreign artists.

The above being a statement of the position of the English ornamental sculptors, I beg that in justice to them you will insert this letter.

CHARLES GRASSBY, Carver.

CITY OF ELY WATERWORKS.

IN addition to the communications of which we spoke in our last, we have received one signed "Baldwin Latham, Surveyor of the local Board, Ely," wherein the writer says:—

"The works there are so constructed as to be supplied with water from natural gathering-grounds, the catch-water drain of Caudle Fen forming the boundary of one side of the works, from which a pipe is laid to the filters; but it has been found by experience that the water is of a quality very inferior to that taken from the river Ouse, and consequently is but seldom used. There can be no doubt that the local Board only abandoned the idea of supplying this city exclusively from gathering grounds, from a thorough conviction, after due experience, that Mr. Lee's scheme was altogether insufficient for the purpose, and from necessity betook themselves to the river as the best and most abundant supply that could be procured in the neighbourhood at the least expense to the rate-payers.

The original estimate of 25 gallons per day for each inhabitant, for every purpose of public and private use, giving 170,000 gallons per day for the whole population, has been found here as in many other places very far below what is actually required,—a fact now well known to most engineers; and in this city, a quantity of not less than 300,000 gallons per day has to be pumped up by steam power for the general use of the place. This increased demand has, of course, increased the consumption of coals, and will necessitate some material alterations and additions to our works."*

COMPETITIONS.

South Myton, Hull.—We are informed that Mr. R. Blessley's design has been selected in competition for St. Luke's Church, South Myton, Hull, by the Committee of the Hull Church-Building Society, and is to be carried out under his superintendence.

Croydon.—The first premium for the Croydon burial-ground and chapel has been awarded to Mr. E. C. Robins, architect.

A FOREIGN COMPETITION.

A CORRESPONDENT says there is a competition open to all countries, for a new Palais de Justice, in Brussels: first prize, 10,000 francs, second, 6,000—any style! It was mentioned officially in the *Independence* of the 30th of March. Designs are not to be full—only sketches, and are to be sent in to the Ministère de la Justice, Brussels, before the 1st of August next.

MASTERS AND WORKMEN.

IF properly and fairly managed, much valuable information will be gathered by the Parliamentary inquiry which is at present going forward on this important subject. There is, however, one thing which we hope will not be omitted: this is the examination of a few intelligent and practical working men belonging to various trades. Without doubt the secretaries of trade societies are well fitted to supply a vast amount of useful information. Still, without the perhaps rough and homely expression of the views of the actual workers, this subject will not be properly placed before those who have the power of forming, or at any rate suggesting, Courts of Conciliation, which may be the means of improving the feeling between the employer and the employed, and preventing strikes, which are so injurious and destructive to all, not only those immediately concerned, but many others connected with various interests.

SCHOOL-BUILDING NEWS.

Cley (Norfolk).—The new British schools recently erected in this town were opened on the 28th of February. They have been built from designs prepared by Mr. John J. Darken, of Holt, architect, and under his superintendence. They are in the Elizabethan style. The walls are of rubble, 20 inches thick, faced with stones gathered from the beach, having bands of red brick-work, with moulded brick ashlar work round the windows and door frames, and to every internal and external angle of the building. The accepted estimate was 453*l.*, with the old materials. The schools accommodate 140 children. The principal school is 45 feet 6 inches, by 18 feet wide in the clear, with a class-room attached, 13 feet 6 inches by 12 feet, fitted with gallery. The infant schoolroom is 18 feet square, with gallery to ditto 12 feet by 11 feet. The walls of both schools are 13 feet high. There are also three porches to the several schools, 6 feet by 6 feet. All the main timbers of the roof are exposed to view, and are wrought and stained. The desks and seats, with all the joiners' work, are stained and varnished.

Farnham.—The new national schools here are now completed. They were erected to hold, according to Government measure (6 square feet for each child), 150 boys and 120 girls. Mr. J. Colson, of Winchester, was the architect. Messrs. Chinnocks, Chichester, were the builders. The total cost, including fittings, apparatus, &c., &c., amounts to 2,305*l.*; the builders' contract, 1,890*l.*; the grant from Government, 1,059*l.*; voluntary subscriptions, 777*l.* 17s. 6d.——The

* A second letter from the same gentleman, in reply to "Dan," was too late for attention this week.

National school-rooms at the village of Wrecklesham, about one and a half mile from Farnham, are nearly finished. The cost of building them amounted to about 900*l.*, towards which the Government granted 500*l.* The remainder was made up by voluntary subscriptions. The rooms will hold 210 pupils, by the Government measure, 6 square feet for each child.

Worcester.—The new additions to the school-rooms in St. Paul's, the Blockhouse, says the local *Herald*, are nearly completed, and, together with the church to which they are attached, form an important nucleus for the rapidly-increasing population and newly laid out streets of that district. The principal school-room adjoins the old one, from which it is divided by a movable partition, so that both may be thrown into one, or kept separate, as the requirements of the school may render necessary. It has an open roof of stained wood, with a steep pitch, and is lighted by three-light windows, with trefoil heads, the south window having freestone mullions and alternate coloured brick in its arches, which is also the case with the heads of the doors. There is a room for the infants' school, and class-rooms up-stairs, besides a residence for the mistress. A large play-ground has been enclosed, and its iron railings were presented by a firm in the city. The exterior effect of the buildings, however, is very far from complete: the bell-turret is not yet erected, and the old schools, which are particularly ugly and badly proportioned, are not yet made to harmonize with the new buildings. This want of completeness is chiefly owing to the small sum granted by the National Society, and partly to certain red-tape restrictions. It is hoped, however, that some day the plan, as designed by Mr. Hopkins, the architect, will be thoroughly carried out. The present addition to schools, alterations of old schools, land, walling, &c., have cost about 940*l.*

Holmer (Hereford). — New national schools have been erected and opened in the parish of Holmer, near this city. The edifice is in the Elizabethan style. The cost of the land, building, fences, &c., was 450*l.* The school has been erected from the designs of Mr. J. H. Evins, of Hereford, architect. The contractors were Messrs. Morgan & Price, of Hereford.

Great Horton (Yorkshire). — The Wesleyans have just completed the erection of some school-buildings in Paternoster-row, Horton, and the Episcopalians are employed in completing another building for the like purpose, near the Episcopal chapel. The Wesleyan schools were publicly opened on Shrove-Tuesday. The schools, from the designs of Mr. Samuel Jackson, architect, will accommodate 500 scholars, and comprise an infant school for children of both sexes under seven years of age, a mixed school for children above that age, with a sewing department for girls, and four class-rooms. The schools are one story in height, and are built in the Italian style of architecture. The residence of the master and mistress, two stories in height, is detached. The cost of the building, including the land, is 2,500*l.*

Clun.—The trustees of the Clun Hospital intend erecting schools for that district, together with residences for master and mistress. The building will be erected with stone of that neighbourhood, and is to be commenced immediately. The designs are by Mr. Edward Haycock, of Shrewsbury, architect; and the contract is taken by Mr. John Mil''ngton, of Oakengates.

Tranmere (Cheshire).—The foundation stone of new national schools, in connection with St. Catherine's Church, Tranmere, has been laid. The site is on the Holt. The schools are designed in the Tudor style, and will consist of rooms for boys, girls, and infants, so as to accommodate in all from 300 to 400 scholars. The material will be brick, with stone dressings. The roofs will be of open timber work, dressed and varnished. Mr. Walter Scott, of Liverpool, is the architect; and Mr. Hogarth, of Rock Ferry, is the builder.

PROVINCIAL NEWS.

Windsor.—The new roads round Windsor, according to a western paper, are going to ruin in consequence of an unfortunate misunderstanding between the Windsor surveyors and the agents of the Crown. They are said to be now becoming dangerous, and injurious to conveyances of every description.

Cardiff.—The following tenders were received for the erection of the new station-house:—J. Griffiths, Newport, 2,751*l.* 10s., or with some alterations, 2,551*l.* 10s.; W. Smith, Roath, 3,528*l.* 13s. 6d.; A. Chambers, Cardiff, 3,898*l.* 17s. 6d.; James & Price, 3,501*l.*, if stone used instead of brick, 3,275*l.*; if Portland cement used instead of Bath stone, 3,107*l.*; J. Webb, Cardiff, 3,696*l.*; R. Hughes, Bristol, 3,947*l.*; D. Jones, Cardiff, 3,589*l.* Mr. Winstone held that the tender of Messrs. James & Price was inadmissible, as it was hampered with so many conditions. The tender of Mr. John Griffiths was accepted.

EXCAVATIONS FOR THE CITY RAILWAY IN THE YORK-ROAD (MAIDEN-LANE).

The works here are steadily progressing under the hands of a numerous band of workmen. From the upper part of the King's-cross station an excavation is being made through the centre of the road, which, as the opening is dug of sufficient size, is arched over and then covered with hot pitch and the materials of the road. The crown of the arch comes very close to the surface. On the west side the clay crops out to within about 18 inches of the present surface; on this is a layer of red baked clay, and then broken granite. On the east side the quantity of granite and other materials extends to a depth of about 5 or 6 feet: in parts below this are the brick foundations of buildings, then black, poisonous-looking soil, and indications of sewers of an imperfect description. The labour of getting through this material is very great.

In the centre of the road, at a considerable depth, it is necessary to remove the large sewer which has been for some time in use, a new one having been made down the east side of the road close to the foot-path. The removal of this sewer seems to be anything but a wholesome process: a heavy, deadly smell comes from the opening, and the workmen seem to be oppressed with the gases amongst which they work. Although the day is clear and bright on the surface, the breath of the workmen may be seen below in the same manner as on a foggy November morning. The proper ventilation of underground railways ought to be an important consideration. The polluted condition of the soil shown in parts of this work,—and it is nothing here in comparison with some other quarters,—points out one of the causes of the ill-health of towns, and shows how necessary it is, in the formation of new neighbourhoods, to provide by proper drainage and by careful scavenging that what may be called the skin of London may be kept clean and wholesome.

So far as we have been able to learn, nothing of any great curiosity has been brought up. Several ragged urchins examine anxiously the throwing up of each spadeful: they rake amongst it, and break up pieces of concrete, &c., and are rewarded for their pains by the discovery of bones, rusty nails, and fragments of iron: should they light upon matters of greater curiosity, it is to be hoped that a careful chronicle of them will be kept.

CAST-STEEL BELLS.

We have been asked more than once where steel bells can be obtained. Such questioners we are forced in ordinary cases to refer to our advertising columns; but as this branch of industry is comparatively new, we depart from our rule and mention Messrs. Naylor, Vickers, and Co., of Sheffield,—the more readily too, because this firm desire to make an offer through our columns. The cast-steel bells, which are described as being much cheaper than bells of the ordinary composition, are at present little used in England: the consumption as yet is confined to the United States; and Messrs. Vickers, desiring to have an opportunity of placing a peal or a single bell (of not less than 1,000 lbs. weight) in some church in a central position in London, are willing to sell, at a *reduced price*, and subject to approval when hung, a single cast-steel bell, or a peal, for a London church in a central position, to the *first* person that will order from them.

ARTISTS' GENERAL BENEVOLENT INSTITUTION.

The anniversary dinner held on Saturday last was more numerously attended than has been the case for some time. The Right Hon. W. E. Gladstone presided, and advocated warmly the interests of the Institution. He was a little too metaphysical in his speech, but made one or two happy points. To the toast of the "Army and Navy," Sir Roderick Murchison responded. The Earl of Stanhope proposed the health of the chairman, pointing to him as an instance of what ability in even a younger son would do. "The Royal Academy" was replied to by Sir Charles Eastlake. "The Societies Established for the Promotion of the Fine Arts," proposed by Mr. Godwin, was responded to by Mr. Hurlstone; "The Artists' Annuity and Benevolent Funds," proposed by Mr. Creswick, R.A., and replied to by Mr. David Roberts, R.A., and several other toasts followed. In addition to those already named, the assembly included the Hon. E. Stanhope, Mr. Charles Landseer, Mr. F. R. Pickersgill, Sir Charles Barry, Mr. S. Smirke, Professor Donaldson, Mr. T. H. Wyatt, Mr. Hardwick, jun., Mr. Egg, Mr. Frith, Mr. Elmore, Mr. Horsley, Mr. Millais, Mr. O'Neil, Mr. E. W. Cooke, Mr. W. F. Pollock, Mr. John Murray, Mr. Farrer, &c.

The subscription list, read by Mr. Phillips, the honorary secretary, was a large one.

THE LATE MR. ROBERT STEPHENSON AND THE NEWCASTLE HIGH LEVEL BRIDGE.

Sir,—While the scientific world has to mourn the loss of two of the greatest practical engineers whose works have ever contributed to the glory and improvement of the whole civilized community, it is certainly much to be regretted that the mistaken attempts of injudicious friends and admirers of departed greatness should seek to invest their memory with false claims to which they themselves never pretended, thereby detracting from their real merits, and depriving humbler aspirants to public favour of the small share of honour justly due to them.

In the month of October, 1840, I was engaged by Mr. T. Storey, engineer to the Great North of England Railway, to assist his son, Mr. Storey, jun., in laying out the line of railway from Darlington to Newcastle, and preparing plans and estimates for the works of the same. I had been previously engaged for nearly two years under Mr. G. Stephenson, on the North Midland Railway, from Derby to Leeds, and while there one of the gentlemen of Mr. G. Stephenson's staff, under whose orders I was for some time acting, was Mr. A. Ross, at present engineer to the Victoria-bridge, at Montreal.

I joined Mr. Storey's staff, at Rusby Ford, Durham, October 29, 1840, and assisted Mr. Storey, jun., and Mr. Sopwith, of Newcastle, in laying out the line to Newcastle. During the progress of the survey, Mr. Storey, sen., met us once at Chester-le-Street, and asked me if I thought myself competent to design several large bridges for the projected line, more particularly the High-level Bridge across the Tyne. This was about the 12th of November, 1840. Mr. Storey showed to me a design for this bridge by Mr. Green, of Newcastle, architect, the main feature of which was the adoption of laminated timber-ribs, a novel mode of timber construction, introduced (I believe) by Mr. Green himself, but which Mr. Storey did not approve of. This fact will serve to show that the project for crossing the Tyne upon the high level was no new idea, but had been for some time past in contemplation.

It must also be observed here that Mr. Storey himself belonged to that class of old-fashioned engineers who considered bridge building the duty rather of an architect than an engineer, and never attempted to design the larger works upon his own railway: in proof of this I may mention that the large bridge over the Tees, at Croft, on the line of the Great North of England Railway from York to Darlington, was designed by Mr. N. Welch, of Newcastle, and his name was engraved on the stone parapet of the bridge.

I readily undertook to prepare the designs in question, having for many years made bridge building my chief study, and when with Mr. G. Stephenson had opportunities of copying the designs and specifications, and witnessing the construction, of many large works of this character, although none equal in magnitude to the proposed High-level Bridge.

After the survey was finished, I commenced at Mr. Storey's office, St. Helen's, Auckland, designs for the following works, viz.:—

One large timber viaduct, of one large and two smaller spans, across Shincliffe Grange.

One ditto, of three equal spans, across Chester Burn, at Chester-le-Street.

One ditto, of one arch, across the river Wear, at Durham.

Three ditto across the river Tyne, at Newcastle,—namely, one of stone; one of timber, with stone piers; one of cast-iron, with stone piers.

The main features of all these three last were the same: each design was intended to convey the railway across the river Tyne at a sufficient height to allow vessels of moderate size to pass under, and they were all intended to accommodate carriage as well as railway traffic.

Upon my completing these designs, Mr. Storey, mistrusting his own ndividual judgment, sent

them to Edinburgh, to a professional gentleman whose opinion he appeared to value highly: his name, I believe, was Byrne, but he was quite a stranger to me.

On the 21st of January, 1841, Mr. Storey, in consequence of some dispute with the directors of the Great North of England Railway, resigned his appointment as their chief engineer. Some disputes occurred between Mr. Storey and the company, relative to the delivery of his plans, papers, &c.; but this was ultimately arranged, and the whole given over as a temporary measure to a young engineer, formerly one of Mr. Storey's pupils. His name was H. Whitwell: he was a member of the Society of Friends, and nephew to Mr. Backhouse, the banker, of Darlington.

Shortly after this, Mr. R. Stephenson was appointed the chief engineer to the railway company, in place of Mr. Storey, and the entire office at Darlington delivered over to his care: this was about the end of February, 1841.

As, however, the company, from want of funds or some other reason, was induced to postpone their works for an indefinite time, I left their employ on April 29th, 1841, and came to London, where I got an engagement under Mr. W. Cubitt, of Gray's-inn-lane.

From this date all connection with the Great North of England Railway ceased, and I had forgotten all about my designs, until I saw, many years afterwards, in the *Illustrated London News*, a large drawing of the Newcastle High-level Bridge, then just completed under Mr. Stephenson's direction, and I at once saw that it was an exact copy of one of the designs I had furnished to Mr. Storey many years before, and resembled it in every particular, even to the very foundation, as I afterwards learnt, when working drawings of the bridge were published.

The reader may form his own opinion upon this subject, which is merely a statement of facts; but, were Mr. Stephenson still alive, I feel certain that he would never have attempted to deprive one of the humblest professors of our noble science of the small amount of merit due to his exertions.

Upon a future occasion I shall have a few remarks to make upon the Tubular Menai Bridge.

EDWIN E. MERRALL, Civil Engineer, Madras.

CHURCH-BUILDING NEWS.

Diss.—The New Baptist Chapel recently erected here has been opened. Mr. Spurgeon preached in a tent on the opening day; and on the ensuing Sunday the architect preached two sermons in aid of the chapel fund. The new edifice, which is calculated to hold 650 persons, has been erected at a cost of about 2,000*l.*, between 500*l.* and 600*l.* of which remain to be liquidated.

Stroud.—The premium of 20*l.* offered for plans for the new church at Stroud has been awarded to Mr. Bland, of Birmingham. Some delay has arisen, it is said, from the difficulty of making a selection, on account of the excellence of one or two other plans.

Bristol.—The committee for the restoration of St. Mary Redcliff Church, in an advertisement in the Bristol papers, draw attention to a letter from S. W. Lucas, esq., of Birmingham. It will probably be recollected that in a former letter Mr. Lucas offered to give 500*l.*, provided nine other persons would contribute a similar amount. The committee were not successful in obtaining the required number, and on informing Mr. Lucas of the fact he not only sent 500*l.*, but offers to contribute a further sum of 100*l.* annually for five years, on condition that the promise of a further sum of 800*l.* per annum is obtained. The committee, therefore, solicit the co-operation of those who can afford to help them. Four persons have already, we are glad to hear, intimated their willingness each to contribute 100*l.* for five years, and several others have promised smaller amounts.

Plympton St. Mary.—The church of Plympton St. Mary, Devon, has been re-opened, after having undergone a thorough restoration and repair. Of the sum required for re-roofing, re-pewing, and general restoration, 1,000*l.* were levied by a rate of 20d. in the pound, two-thirds of which were borne by the owners and the remainder by the occupiers of the lands, the rest being made by subscriptions and special donations.

Over (*Cheshire*).—The foundation-stone of the new church at Over, which is to be erected almost entirely at the cost of Lord Delamere, by whom it will also be endowed, and which is intended as a memorial to the late Lady Delamere, was laid on Friday, 23rd March. The church will be of Geometrical Gothic design, and will consist of nave, chancel, north and south aisles, with a chantry and vestry on the north side of the chancel, and a tower and spire (140 feet high, to receive six bells) erected at the south-west angle. Accommodation will be provided for 550 people, and sittings mostly free. The erection of a parsonage-house is said to be also contemplated by Lord Delamere. The total cost of the church, everything complete, is estimated at from 5,000*l.* to 6,000*l.* It is expected to be roofed in, and the tower and spire erected before the end of the present year; and it will be completed and ready for consecration in the spring of 1861. Mr. John Douglas, jun., of Chester, is the architect; and Mr. R. Beckett, builder, of Hartford, has received the contract.

Stoke Bishop (*near Bristol*).—The church of St. Mary Magdalene, Stoke Bishop, has been consecrated. The building is in the First Pointed Gothic style, from the designs of Mr. Norton, of London, and consists of a nave, south aisle, and chancel, with sitting accommodation for 336 persons, about 90 free. Additional accommodation can be provided for 100 persons. The nave is 54 feet 6 inches in length, by 22 feet wide, the south aisle being of the same length, and 13 feet 6 inches wide. The chancel is 24 feet 6 inches by 17 feet, and terminates at the east end in the form of a polygonal apse. On the north side, and immediately behind the organ (which is by Mr. Bevington, of London), is the vestry-room. The chancel arch windows and the principals of the nave are throughout carried by columns of polished slate. The clerestory is formed of coupled lancets. The roof is in open timber work of stained deal, varnished. The cost of the building, according to the contract, was 2,300*l.* The three apse windows of the chancel are filled with stained glass by Messrs. Clayton & Bell, of London, and represent nine scenes in the life of our Lord. One was presented by Mr. Phippen, one by Mr. Penny, and the third by subscription. Two more stained windows for the south aisle are promised by two ladies of Stoke. Over the altar is a piece of sculpture, representing the supper at Emmaus, and executed by Mr. Farmer, of London. The floor of the chancel is ornamented with tiles, inlaid with Painswick stone; and the altar standards are by Mr. Singer, of Frome. The pulpit, font, capitals, corbels, &c., were carved by Mr. White, of Bristol. The whole of the work has been carried out under the superintendence of Mr. Wilkinson, the clerk of the works. When the necessary funds are forthcoming it is intended to erect a spire, of the height of 150 feet: the present windows, also, will be superseded by lights of stained glass.

Barnsley.—At a recent meeting of the local Board of Health, the tenders for the erection of a new cemetery were considered, and the necessary work let as follows:—Mason's work, Mr. T. Richardson, of Bretton West, at 1,390*l.* 14s. 9d.; joiner's and carpenter's work, Mr. Henry Harrison, Barnsley, 435*l.* 13s. 7d.; slating, 139*l.*; plumbing and glazing, 84*l.*; ironwork, 80*l.*, Mr. W. Brown, Barnsley; plastering, Mr. W. Barker, Leeds, 74*l.* 14s.; carving, Mr. Mawer, Leeds, 80*l.*; painting and staining, Mr. Chas. Rogers, Barnsley, 30*l.* 8s. There was a difference of upwards of 700*l.* betwixt the highest and lowest tender for the mason's work. Lightning conductors, &c., and extra excavations, were not included in the tenders. The estimated cost for these is about 140*l.* The total for the whole of the works amounts to 2,497*l.* 10s. 4d., being considerably lower than the Board calculated upon. The foundation stone of the above building, according to the *Leeds Intelligencer*, is to be laid on Easter Monday.

THE PAINTER-STAINERS' COMPANY AND DECORATORS.

The *Leader and Saturday Analyst*, which has commenced a new career, restricting itself to original papers, urges that there is life yet in the City trade Corporations, and thus notices one effort that is being made to revive it:—"The able and intelligent master of the Painter-Stainers' Company, one of the most ancient of the City guilds, has put forth a plan which is certainly likely to arouse the attention and excite the efforts of the operatives engaged in house-painting and decoration, which he very properly styles arts. He seems to have thoroughly mastered his subject, and has not sought, with any antiquarian *dilettanteism*, to revive obsolete ceremonies or forms, or even usages, but comes at once to utilizing the powers and means of the Guild to modern requirements. We cannot better show his plan than by his circular addressed to his own trade:—'The powers of the various Guilds are not maintainable under their by-laws, and it must be acknowledged they have fallen into desuetude, and operate in restraint of trade. I consider, however, by substituting emulation for coercion, that the Guilds (especially those where skilful handicraft is required) might yet maintain as bodies a firm and useful position in society; and my suggestion for effecting this, as relates to this company, consists in inviting the workmen, artificers, and artists, connected with painting and decoration, to submit their works annually to public inspection; their merits to be judged by competent persons. The public exhibition of such works to take place at the company's ancient hall.'"

DECISIONS UNDER THE METROPOLITAN BUILDING ACT, 1855.

"NECESSARY REPAIRS."

Marlborough Street.—Thomas Roberts, of New Ormond-street, Queen's-square, builder, was summoned before Mr. Bingham, by Mr. Charles Mayhew, district-surveyor of St. James's, Westminster, under the Metropolitan Building Act, "for that he did put up and erect a shop-front to the external wall of the house or building, No. 4, St. James's-street, which street is of a width greater than 30 feet, and which said shop-front projects more than 10 inches, to wit, 2 feet and ½ an inch, whereas the said shop-front should not project more than 10 inches, and the cornice thereof should not project more than 18 inches; and the defendant had not amended the irregularity, as required by notice, given by the district-surveyor."

Mr. W. L. Donaldson conducted the case on the part of the district-surveyor; and Mr. Sleigh defended.

Plans of the building were laid before the court.

Mr. Donaldson stated, that by the 26th section of the Building Act, clause 2, a shop-front was not allowed to project, in a street wider than 30 feet, more than 10 inches, and the cornice not more than 18 inches, from the external wall: Saint James's-street was wider than 30 feet. The shop front complained of projected 2 feet and ½ an inch, which was contrary to the express provision of the Act. He thought the case so clear that, unless he had seen the learned counsel attending to defend, and a surveyor also, he should not have supposed there was an answer to it; but as it was so, there must be some points which had escaped his attention. He however, understood that the 5th paragraph of section 26 was relied upon, and that it would be contended that the shop-front did not extend beyond the general line of fronts in the street; and a plan had been prepared by the defendant's surveyor to show how he considered the general line of fronts to be, and to prove that the shop-front did not extend beyond that general line. He (Mr. Donaldson) would call the attention of the magistrate to the fact that shop-fronts were excepted out of this fifth clause, and it applied only to porticos and other projections not being shop-fronts. Perhaps the defendant might think that he might bring his case within the 9th section of the Act; but here the whole front wall and the original shop-front had been pulled down and removed, and he (Mr. Donaldson) contended that the 9th section of the Act brought every alteration, addition, or other work done for any purpose to an old building to the extent of such alteration, addition, or other work, within the operation of the Act, unless it could be shown that the work was a necessary repair not affecting the construction of any external or party wall. Here it was not a repair, but a reconstruction,—a new external wall altogether, and a new shop-front, and he submitted that an order should be made for amending the irregularity.

Mr. Mayhew proved the re-erection of the new front wall, after the total demolition of the old, from the roof to the base, and the finishing part, with the shop-front, the stall-board being made to project 2 feet ½ inch, and the brackets for the cornice 2 feet 2 inches, he submitted, was a great excess over the limits in the Act, which expressly lays it down that in a street of greater width than 30 feet the maximum of a shop-front projection shall be 10 inches and no more, and the cornices or brackets 18 inches and no more, measuring from the perpendicular of the external wall. In consequence of these infringements of the provisions of the Building Act, he had called on the defendant, and waited patiently to have the same properly altered, but nothing was done, and hence the present proceedings.

Mr. Sleigh said that in the absence of the Legislators who framed the Metropolitan Building Act, with all its intricacies and anomalies, it was a very difficult thing to get at a correct elucidation. It had been truly remarked, that no man, with all its inconsistencies and absurdities, was able to define this Act; but of that part of it, bearing upon the present case, he would take a common-sense view.

Mr. Bingham observed,—A common-law sense view.

Mr. Sleigh.—Yes; a common-law sense view, which would clearly establish that this was not a case contemplated by the Act. It was satisfactory to him to hear the learned gentleman, in his opening remarks, instance the very clauses which would exactly supply the answer for the defence, though in his doing so he had somehow managed to put, as the adage had it, "the cart before the horse," for he had relied on the 28th section before considering the preceding sections, 9 and 10, on necessary repairs. The question really was, whether this particular building was still the old one with repairs, or now a new one? To him and common sense it was manifest, notwithstanding needful alterations to make the premises secure and habitable, the fabric was not a new building, and no such amount of pulling down had taken place as would make it so. The various sections must be read *pari materia*, and the context borne in mind, particularly in this case; the 9th, as to the exception of necessary repairs, and then the 10th may be altogether ignored. That section defines what extent of pulling down and renewal shall be deemed a new building, but there the exception in the 9th section steps in as "necessary repairs."

Mr. Bingham said,—"Occupants of premises sometimes take down full one-half a building for purposes of ornamentation."

Mr. Sleigh.—But in this case it was not so, but alterations of a necessary character for the safety of the premises, which warranted the course pursued by the defendant, and "necessary repair" was the full answer to the summons. The front wall was of precisely the same nature as the old one, new material only being substituted

for that which was dilapidated. Nor could it be said that the new facia, or ornamental finish of the stall-board or shop-front, exceeded the general line of similar buildings in the same street. To take any one clause of the Act by itself for the purpose of supporting a summons of the nature of the present, was absurd. The entire meaning could only be seen from the context, and, this being found, a decision must be come to for the defendant. Common law, it had been said, was common sense, though the popular notion of it was not a very scientific one, and a common-law sense view of the matter he would rest on for the answer to the present summons.

Mr. Marsh Nelson, in evidence for the Defendant, stated that it was intended originally to alter the roof only, but the front wall was found so defective, that it was necessary to pull it down. The foundations remained, but the wall had been reconstructed in the same form as before. The windows were in the same place, and the door and the shop-front did not project more than the old one.

Mr. Bingham delivered on a following day this judgment:—"I have carefully considered the various clauses of the Act, and have viewed the premises with a brother magistrate, and we have agreed that, it having been satisfactorily proved that the work objected to was the rebuilding of an external wall for the purpose of necessary repair of the structure, and that such repair did not affect the construction of the external wall, inasmuch as the apertures for door and windows were in the same position and of the same size as in the old wall, and the projection did not extend more than half an inch, if at all, beyond the projection from the old wall, covering, in fact, as nearly as possible, the same space,—the work objected to falls, therefore, within the exception in the 9th section of the Metropolitan Building Act, 18th and 19th Vict. c. 122, and the summons has not been sustained; at all events, to a greater extent than half an inch, which, in strictness, ought to be planed off."

THE STONE OF THE NEW HOUSES OF PARLIAMENT.

The remarks I made at the meeting of the Society of Arts, on Wednesday, 29th February, about the decay of stone at the Palace of Westminster, were not intended to make the slightest charge of neglect against the contractors. I am ready, willing, and anxious to admit that, on all occasions, at every meeting on the subject of the quarries, or on the supply of Anston stone, both Mr. Grissell and Sir M. Peto evinced the utmost desire to assist in procuring a good material for the important work then about to commence; therefore I regret exceedingly that my observations should have been construed into a charge of neglect against those gentlemen, who no doubt possess the highest qualities, as men of business generally, although they may not be the best judges of the most suitable kind of stone to be used for the exterior of an elaborate edifice. I sincerely believe that, as far as lay in the power and judgment of all concerned with the supply of stone, there was a desire that none of an inferior quality should be sent to Westminster. Mr. Grissell and the public should be informed that Mr. C. H. Smith, and the other commissioners, did strongly recommend, "*at the onset*," not only that some fit person should occasionally inspect the quarries, but also that a properly-qualified individual should frequently, perhaps two or three times a week, examine the stone at Westminster, with full power to admit or reject any of the blocks. But such recommendation was entirely disregarded by the Government authorities at Whitehall-place. There might have been some difficulty in finding a duly-qualified man to undertake such supervision: no *mere* chemist, *mere* practical stonemason, nor *mere* anybody else, could have performed the duties with credit to himself and advantage to those who employed him: it must have been a man possessing a certain amount of general scientific attainments, conjointly with long practical experience in the selection of different kinds of stone, and actual handling of the mallet and chisel. No doubt many such persons were to be found, had they been sought after.

By far the greater portion of the stone appears to be of a good and durable quality; and it is worthy of especial notice that the carvings show scarcely a trace of decay. Along the whole length of the river front there is a series of heraldic sculptures, executed in stones originally weighing perhaps five tons each, with rampant animals as supporters, carved in very bold relief, consequently, more exposed to all the severities of frost and thaw, rain and sunshine, than mouldings or plain surfaces; yet all these large stones are as free from decay as when they were just left by the carvers. This may seem to infer that the workmen, or the principal carver, exercised considerable discrimination in the choice of the blocks; that is, to take such as would cut and work freely, or appear to be of one uniform quality throughout their entire mass; and we now have positive proof that such stones are amongst those of the least perishable quality. In one of Mr. Grissell's paragraphs he states "that the stone supplied for the Museum of Economic Geology, and the Amicable Assurance Office, came from the same quarry as that of the Houses of Parliament, and without any greater care or particularity of selection." This surely is quite in favour of my view of the case, namely, that most excellent and durable stone is to be obtained from the same quarries; and all that is requisite is a properly-qualified person to choose it. And further, he says that "the stone supplied to the buildings in Lincoln's Inn was expressly selected by a practical mason sent from London by the authorities who had charge of those buildings." In this case we have positive proof that the mere practical stonemason was thoroughly unfit for the important mission entrusted to him, and the working mason himself was not so much to blame for want of discrimination as the authorities who gave him the appointment.

Mr. Grissell thinks it would have been more becoming *me*, had I adopted the reasoning of Professor Austed, about the best stones being always the most crystallized. If Mr. Grissell will refer to our Parliamentary Report, of March, 1839, which was long before the appearance of Mr. Austed's writings, he will find that we repeatedly, and strongly, recommended the use of those stones which are most crystalline. Mr. Austed also stated that we were obliged to go to another quarry in the same neighbourhood, which was not of the same quality of stone as that which had been experimented upon by the commissioners. In answer to this assertion, I can state that after our first tour of inspection, in the autumn of 1838, which was reported to the Office of Works in March, 1839, I again accompanied Sir C. Barry and Dr. William Smith, in the month of August following, to examine and report upon the newly-discovered quarries in the neighbourhood of Bolsover-moor. I likewise, in August, 1843, proceeded with Sir H. T. De la Beche, to examine and report especially upon the Anston quarries. On each of these occasions, fair average sample blocks were procured, forwarded to London, minutely examined, and mechanically and chemically experimented upon, in order to compare their physical properties, with samples from other quarries, and from old buildings in the neighbourhood, in a manner precisely similar to the mode adopted on all former occasions connected with the Parliamentary Commission, in its researches and investigations for good stone.

C. H. Smith.

Books Received.

Lectures on the History of England, delivered at Chorleywood, by William Longman. *Lecture II.* London: Longman & Co. 1860.

The series of lectures of which this forms one was prepared by Mr. Longman for delivery to the "Chorleywood Association" of workmen and labourers, near Watford. The association is in itself an interesting one, of which some account is given on the cover of the book. The author has greatly extended the two lectures already published, beyond the limits to which they were restricted in delivery. The matter is very ably put together, in a way which could not fail to prove both intelligible and interesting to the particular audience to whom it was addressed, as well as to the general reader. The lecture before us gives an account of the feudal system, and the origin of the laws and government of England. It is illustrated by some pertinent engravings, the largest being one of an ancient tournament, in colours, from one of the Cotton MSS. in the National Library.

A House for the Suburbs. By Thomas Morris, M.I.B.A. London: Simpkin & Co. 1860.

To sketch "A House for the Suburbs," "socially and architecturally," was a good idea; but Mr. Morris has not made as much of it as it was capable of. However, we will not be exigent, but contenting ourselves with this gently-urged objection, will speak of what the book is, rather than of what it is not. Its staple consists of plans and a view of a family house, with its outbuildings and accessories; and the author also gives a block plan of a house and ground near Wimbledon-park, Surrey. In connection with this he says:—

"Houses of medium size in London, though of considerable pretension externally,—such as those in Regent-street, for example,—occupy less on an average than the twentieth part of an acre. Semi-detached houses near the metropolis, of the yearly value of a hundred pounds, have seldom more than a quarter of an acre allotted to each; and the engraved block plan of a house near Wimbledon Park, Surrey, is put forward to show the scope afforded by a site of 100 feet wide by 220 in depth, and containing therefore 22,000 superficial feet, or just about half an acre.

I invite attention to these statements the more earnestly, from a conviction that many people, proposing to reside in the suburbs, demand an extent of land very much greater than their actual objects necessitate; and, when they come to count the cost, think there must be some league to keep up the price. They may thus be able to define their wants more exactly, and will do well to bear in mind that the occupation of unnecessary land is a positive evil, entailing endless expenditure, and inducing slovenliness."

The style adopted for the house is Jacobean. In the plan the kitchen adjoins the dining-room, an arrangement which would be found objectionable, especially in summer.

The volume, which is well got up, is inscribed to Mr. William Railton, architect, with whom, for many years before Mr. Railton's recent retirement from practice, Mr. Morris was connected.

VARIORUM.

"London at a Glance: an illustrated Atlas of London" (Hodgson, Paternoster-row) is a very useful novelty. It comprises thirty-six maps in sections, a key map of all London, an alphabetical index of 7,000 street references, and a general index of public buildings, hotels, places of amusement, &c. By making reference to the street index, the name of any street wanted may be readily found, together with the number and even the portion of the plate containing it, so that all hunting through one large map (often very indistinctly lettered) is completely obviated. The names of the streets on the plates are plain and distinct; and, so far as we have seen, the maps or plates are correct.——Book the third of "The Graduated Series of Reading-Lesson Books for all Classes of English Schools" has been issued by Messrs. Longman & Co. The lessons appear to have been well selected: they comprise descriptive travel, natural history, historical narrative, and miscellaneous matter; and the whole forms what we might almost call an interesting story-book for youth.——"The Friend of the People" appears to be prospering. The number for the 31st of March, we observe, contains an article on Operative Associations, in which some account is given of the "Rochdale Equitable Pioneers' Society," which has been fifteen years in existence, and therefore affords a good criterion of what can be done with such associations when discreetly managed. The Rochdale began with a capital of 28*l.*, and a shop rented at 10*l.* In 1859, the funds were 27,060*l.*, and the profits 10,739*l.*;—this, too, be it observed, all the while that both members and the public are provided with good wholesome articles of food, &c., at wholesale prices, with the addition only of a small profit to represent the interest on the capital employed, expenses, and depreciation of stock. The Association met with strong opposition from "the trade" of shop-dealing middlemen, who everywhere consider that they have a vested right in a portion of every mouthful consumed by the poor as well as by the rich: nevertheless, by prudence and good sense on the part of the members and their management, all such opposition was overcome at Rochdale, as it, doubtless, may be everywhere else. The Association, we may add, have now a library of their own, a large flour-mill, &c., and lately they erected a drinking-fountain, after the design of that in Regent-circus, London. The establishment of such an association offers a lesson to the working classes generally, and shows how much more profitable a use they might make of their spare cash than in throwing it away in thousands of pounds upon strikes.——Two interesting "Reports" have been forwarded to us from Bristol,—one the "Fifth Report of the Red Lodge Girls' Reformatory School, Bristol, with the Rules and Principles of Management;" and the other, the "First Report of the certified Industrial School, Park-row, Bristol." The latter has been opened under Mr. Adderley's Industrial Schools Act of 1857, and has special difficulties to cope with; but it is to be hoped it will speedily meet with the success it so well deserves. The presiding genius of both appears to be a business-like and liberal lady, named "Mary Carpenter, Superintendent," who not only prepares the able reports themselves, but squares the accounts like a skilful book-keeper, as she must be.——The April number of the *Gentleman's Magazine* contains, with much antiquarian and biographical intelligence, a continuation of Mr. Scott's "Gleanings from Westminster Abbey," fully illustrated.

Miscellanea.

Proposed Foot-bridge at Richmond.—Some time ago we expressed a strong opinion against the policy of the Office of Works in refusing assent to the landing on the Crown lands. After a tedious negociation, the Government have given in, but only on condition that the promoters purchase up the Crown ferry at Isleworth (half-a-mile distant) for the modest sum of 1,260*l.*! Thus, this ferry-right will cost very nearly three times as much as the bridge itself. A public meeting has been held in Richmond to raise subscriptions for the purpose, the Hon. Robert Bourke taking the chair. Addresses were delivered, and resolutions were unanimously passed that the proposed foot-bridge, as a work of general utility, was deserving of the financial support of the population both on the Surrey and Middlesex sides of the river. The entire cost of the undertaking will be under 2,000*l.*, the greater portion of which will be absorbed by the Crown for the ferry-rights, and thus end a long discussion on a vexed question.

Valuation of New Brentford.—At a meeting of the vestry on Friday last, to name a professional man for the survey and valuation of the new docks recently constructed at Brentford, and also the contiguous portion of the branch of the Great Western Railway from Southall, the appointment was given to Mr. John Davis Paine, who surveyed the parish of Isleworth, Hounslow, &c.

Monument to Bishop Blomfield.—It is stated that this work in marble is to be executed by Mr. Richmond, the miniature painter. The *Art-Journal*, with just indignation, says,—"We imagine the next fact to startle the art-world will be a tender from Mr. Frith to build the new Foreign Office, or perhaps one from Sir Charles Eastlake to construct the new docks in the Isle of Dogs. Such circumstances would be scarcely less astounding than the employment of a portrait-painter to erect a monument, during the life-time of Mr. Foley, Mr. Calder Marshall, and a few other 'capable' sculptors of Great Britain." It seems to be a delight to some in authority to insult English sculptors.

LECTURES IN THE BROMPTON MUSEUM.—A course of lectures, addressed principally to teachers, on the best methods of acquiring and communicating knowledge in various branches of science, will be delivered at the South Kensington Museum on the following Monday evenings—16th, 23rd, 30th April, 7th, 14th, and 21st May, 1860. The first will be on "Practical Plane and Descriptive Geometry, and their application to Mechanical and Machine Drawing, and Practical Architecture," by Professor T. Bradley.

ADVERTISE!—Sir: I am convinced, if persons who manufacture materials used in erecting buildings would advertise their wares, a much larger business would be the result. I have been seeking information for some weeks about the various kind of tiles made for covering flat roofs, and for the best method of making flat roofs watertight at a cheaper rate than lead. I have also wanted information as to the best principle for fire ranges, and the heating or warming of rooms. I visited, a fortnight ago, the exhibition at the Architectural Museum, in London, expecting to see everything used in the building trade, but, after paying 1s. for admission and 6d. for a catalogue, I was surprised to find little more than the Photographs, which, no doubt, were good, but not what I wanted. Cannot you give a few hints on this matter that will be useful?—ENGINEER.

THE BIRKENHEAD DOCKS.—The works committee of the Mersey Dock board have recommended the construction of two graving docks at Birkenhead—one of 85 feet, to cost 70,850*l.*, and one of 50 feet, to cost 52,120*l.* The committee also recommended that 10,000*l.* should be expended on engines and pumps, and 9,500*l.* on walls and sheds; the total cost being 142,000*l.* After a lengthened discussion, on the 29th ult., the recommendation of the committee was confirmed.

CAST IRON IN CHINA.—At the last meeting of the Manchester Literary and Philosophical Society, Mr. Wm. Fairbairn, the president, exhibited two large pans of cast iron, procured by Mr. Worthington from China, where they are used for boiling rice. The metal, which was, at the strongest part, only one-tenth of an inch in thickness, possessed considerable malleability. The president remarked that the art of making such large castings of thin metal was unknown in England. There are still things we cannot do, and more we do not know.

SIX-FEET VOLUNTEER GUARDS (32ND MIDDLESEX).—We are asked to mention that this corps will drill at Allen's Riding-school every Monday evening until further notice. It is established with a view to meet the requirements of men whose stature, being above the average height, renders their appearance in the ranks of ordinary-sized corps somewhat awkward, and who might therefore be disinclined to fall in. Since the return from Hythe of the captain commandant, the Hon. T. C. Bruce, the corps has made rapid progress to efficiency. The uniform is of the national colour, and, at the review by her Majesty, will present a striking contrast to the greens, greys, and drabs. Such of our readers as are of the standard height, and want a corps, should join the "Six Footers" forthwith.

PARTIAL DESTRUCTION OF A RAILWAY STATION.—On Tuesday morning, a portion of the iron roofing over the Victoria Station of the London and North-Western Railway, at Manchester, fell in, through a train coming in contact with and breaking one of the cast-iron pillars supporting the north-west corner of the roof. This pillar was exceedingly near to the line of rails, and, in shunting a train, one of the carriages got off the rails, and came in contact with it. The loss to the company, it is believed, will be about 1,000*l.*

ROYAL ITALIAN OPERA HOUSE.—Mr. Gye has issued a very attractive programme for the coming season, embracing all the old favourites and many new names of reputation. "Fidelio," "Stradella," "La Favorita" (with new scenery), "Le Nozze di Giannetta," are announced, in addition to the repertory of last season, and "Le Prophète" is to be revived. In addition, four grand concerts, one, if not more of them, to be given in the Floral Hall, are promised, to which all subscribers to the Opera will be entitled to admission.

IMPROVEMENTS IN ABERDEEN.—We learn from the Aberdeen papers that the directors of the Aberdeen Town and County Bank have resolved to erect a handsome building for carrying on their business in Aberdeen. It will be erected in Union-street, opposite Market-street. Designs were submitted from five local architects, and those sent in by Mr. Mathews, of Aberdeen and Inverness, have received the first premium. The building will cost from 12,000*l.* to 13,000*l.*

RAILWAY TRAFFIC RETURNS.—The traffic returns of railways in the United Kingdom for the week ending March 17, amounted to 457,980*l.*, and for the corresponding week of 1859, to 416,120*l.*, showing an increase of 41,860*l.* The gross receipts of the eight railways having their termini in the metropolis amounted to 190,955*l.*, and for the corresponding week of last year to 176,593*l.*, showing an increase of 14,362*l.*

A REMARKABLE PROPERTY OF IRON.—In 1856, says a contemporary, Mr. March, an able chemist connected with the Royal Arsenal, discovered that it was an invariable rule with iron which has remained a considerable time under water, when reduced to small grains or an impalpable powder, to become red-hot. This he found by scraping from a gun some corroded metal, which ignited the paper containing it, and burnt a hole in his pocket. The knowledge of this fact may account for some spontaneous fires and explosions. The tendency of moistened particles of iron to ignite was discovered by the French chemist, Lemary, as far back as 1670.

THERE IS NOTHING NEW UNDER THE SUN.—I think the following facts will be interesting to your readers at the present time, when the rifle is the topic of the day. The carbine with which Hamilton of Bothwellhaugh shot the Regent Murray, in 1570, is preserved at Hamilton Palace. It has a brass barrel the same length as the Enfield rifle, and the bore is of the same diameter, and, what is most singular, it is rifled nearly in the same manner as the Enfield. The power of this rifle appears to have been great, for "the ball, after passing through the body of the regent, killed the horse of a gentleman who was riding on the other side."—WM. BURNS.

SCIENCE AND ART DEPARTMENT.—The Lords of the Committee of Council on Education desire to afford the greatest facilities to teachers of science and navigation schools in obtaining the best instruments, apparatus, &c., for giving instruction in science and navigation, towards the purchase of which the Science and Art Department is authorized to pay 50 per cent. of the cost; and they consider that the fullest opportunities should be given to manufacturers in all parts of the kingdom for supplying such apparatus. At the same time it is necessary that the Science and Art Department should have some guarantee that the apparatus and instruments are of good quality and moderate in price, and they have therefore laid down certain rules and conditions, which have been published and circulated.

PRESERVING WOOD.—All fence-footings, gate-posts, garden-stakes, and timber that is buried in the earth, may be preserved from decay by the following simple process:—Take 11 lbs. of blue vitriol to 20 quarts of water; dissolve the vitriol with boiling water, and then add the remainder. The end of the wood is then put into solution, and left to stand four or five days; for shingle, three days will answer; and for posts 6 inches square, ten days. Care should be taken that the saturation takes place in a well-pitched tank or keyed box, for the reason that any barrel will be shrunk by the operation so as to leak. Instead of expanding an old cask, as other liquids do, this shrinks them. Chloride of zinc will answer the same purpose, but is dearer.—*Manchester Courier.*

NELSON COLLEGE, NELSON, NEW ZEALAND.—The chief stone of this building (in fact, the only one, for the edifice is to be of wood, on account of liability to earthquakes) was laid on the 7th of December last, by the governor of New Zealand. The architect is Mr. Beatson. The building will form two sides of an inner court or quadrangle, 117 feet by 60 feet, on the south-west side of which will be ranged the domestic offices. All the roofs will be covered with galvanized iron tiles, and have leaden guttering. The contracts for the whole building, exclusive of the foundation, amount to a sum a little beyond 7,100*l.* A tower will project from the centre of the principal front, and, rising above the main roof, will give additional prominence to that portion of the building, while large bay windows will give character and projection to the wings. The principal front will be 142 feet in length. An open corridor or loggia will screen the chief apartments from the sun's rays, and afford depth and shadow to that portion of the structure. The return elevation, or that towards the north-west, which will be 82 feet in length, will correspond with the wings in the north-east front, and have a similar bay window in the centre. The end elevations will be of the same character. The three principal entrances will have open archways and recessed porches, with semicircular oriel windows, projecting on cortels above. The style adopted is the Elizabethan.

SALFORD TOWN HALL EXTENSION.—At the meeting of the Salford town council, on the 28th of March, the town hall and markets committee, with reference to the alterations and extension of the Salford Town Hall, reported that the contract of Messrs. Henry Southern for carrying out the proposed work amounted to 5,625*l.*, which they recommend should be accepted. The committee hoped to realize 400*l.* by the sale of the old materials, so that the sum necessary for the work would not exceed 5,500*l.*; and this would cover any alterations they might in the future think it necessary to make on the proposed plan. The contract of Messrs. Southern was accepted.

ARCHITECTURAL EXHIBITION.—The exhibition will be opened next week. We have been asked to postpone further notice till then, and of course comply.

"MACHINERY FOR OBTAINING AND APPLYING MOTIVE POWER."—A patent taken out by Mr. John Coates, of Lower Shadwell, engineer, after specifying certain central pillars, working-beam, fly-wheel, oscillating cylinder, &c., states that "the hollow-centre pillar or main support is connected at bottom with a ram, the plunger kept regulated by a suitable weight attached to a chain passing over a pulley, and a crane may be applied to draw back the plunger, that water may be admitted without pumping. The opposite or solid end of the working beam has a balance weight attached as a counterpoise to the weight of the cylinder. The cylinder, the tubular portions, and the trough are filled with water, and the working of the piston causes the alternate admission and expulsion of the water, thereby putting the engine into motion." The specification states that there may be two rams, "so that while one is at work, the other charges the ram cylinder with water to obtain the power."

TENDERS

For New Warehouse and Drying-Sheds, White's-gardens, Bermondsey; Mr. Geo. Elkington, architect:—

Wilson	£7,463 0 0
Rider	7,190 0 0
Myers	7,180 0 0
Coleman	6,985 0 0
Wells	6,900 0 0
Wills	6,765 0 0

For New Warehouses, Houndsditch; Mr. T. C. Clarke, architect:—

Jay	£5,096 0 0
Lucas, Brothers	5,095 0 0
Patman & Fotheringham	4,939 0 0
Browne & Robinson	4,700 0 0
I'Anson	4,686 0 0
Brass	4,619 0 0
Lawrence & Sons (accepted)	4,340 0 0

For a Vestry-Hall and Offices for the parish of St. George-in-the-East; Mr. Andrew Wilson, architect. Quantities supplied:—

Wood, Gravesend	£5,580 0 0
Hocken	5,319 0 0
Wood, Mile-end-road	5,300 0 0
Hack & Son	5,237 0 0
McLennan & Bird	5,000 0 0
Winden	4,999 0 0
Hill	4,992 0 0
Blackburn	4,984 0 0
Wilson	4,974 0 0
Hart	4,899 0 0
Ennor (accepted)	4,675 0 0
Raby	4,651 0 0
Glenn	4,590 0 0

For Great Queen-street Schools; Mr. W. W. Pocock, architect:—

George	£3,203 0 0
Clements	2,594 0 0
Sutton	2,540 0 0
Fish	2,511 0 0
Porter	2,496 0 0
Todd	2,476 0 0
Piper & Son	2,400 0 0
Smith	2,399 0 0
Cowland	2,394 10 0
Downes	2,330 0 0
Richards	2,314 0 0
McLennan & Co.	2,283 0 0
Batterbury	2,279 0 0
Rudkin	2,199 0 0
Glenn (accepted)	2,100 0 0

For the first part of a House of Mercy, Wolverhampton, for Mr. Wearing; Mr. E. Welby Pugin, architect. Quantities supplied by Mr. Marples:—

Branson and Gwyther	£2,134 0 0
Heveringham (accepted)	1,908 0 0
Smith (without fittings)	1,895 0 0

For a House and Stabling at Roehampton, for Mr. P. Plumley; Mr. C. Lee, architect. Quantities supplied.

Aviss & Sons	£2,032 0 ..	£418 0 ..	£2,450 0
Nicholson	1,980 0 ..	400 0 ..	2,380 0
Adamson & Sons	1,874 0 ..	399 0 ..	2,273 0
Evans, Brothers	— ..	— ..	2,200 0

For a Lecture-hall at Wrentham, Suffolk; Mr. George Glover, architect, Lowestoft:—

Hubbard & Co.	£1,034 3 0
Woodruff & Co.	938 0 0
Rix	882 3 0
Hilleary & Artis (accepted)	865 12 10
Smith (received too late)	788 10 0

For alterations to the Salmon and Compasses, Penton-street, Pentonville, for Mr. Robert Hart; Messrs. Finch Hill and Paraire, architects:—

Brass & Son	£1,195 0 0
Patrick & Son	1,133 0 0
R. Lawrence	1,129 0 0
Dove	1,085 0 0
Elston	1,082 0 0
Turner & Sons	1,073 0 0

For repairs to Property in the Westminster-road, for Mr. Joseph Stevens; Mr. William Hey, architect:—

Carter (too late)	£310 0 0
Crossweller (accepted)	233 0 0
Downs	249 0 0

For Mr. Orme's Eight Cottages at Ponder's-end:—

Cushing, Enfield	£1,360 0 0
Field, Ponder's-end	1,350 0 0
Ploughman, Finchley	1,200 0 0

For Plasterer's work to two villas on the Spring Grove Estate, Middlesex; Mr. T. Page, architect:—

Arnold	£805 12 6
Hawkins	680 14 4
Tracey	574 0 0
Taylor	568 10 0
Lewis & Thomas	404 0 0
Blandon	340 0 0

For one villa only:—

Pettifer	£420 0 0
Bass	384 5 0

For altering and converting No. 7, "The Terrace," High-street, Kennington; Mr. W. Sim, architect:—

Wheeler	£313 0 0
Fish	252 0 0
Cowland	238 0 0

For re-building No. 3, Mansfield-place, Kentish-town; Mr. W. P. Griffith, architect:—

Ebbage	£249 0 0
Crane	228 0 0
Mann	215 0 0
Brake	210 0 0
Fowler (accepted)	209 0 0

For alterations to St. Matthew's Schools, Denmark-road, Camberwell; Mr. George Low, architect:—

Coleman	£785 0 0
Elston	723 0 0
Smith	665 0 0

For proposed New Galleries, New Porch, Entrance, &c., at Portland-town Wesleyan Chapel; Mr. John Tarring, architect.

	New Galleries.	New Porch Entrance.	Cleaning and Varnishing Old Works	Totals.
Roper & Son	£910 0	£94 0	£32 0	£1,036 0
George Myers	791 0	116 0	43 0	950 0
Sturgis	804 11	87 0	20 0	911 11
W. Higgs	750 0	95 0	20 0	865 0
Newman & Mann	755 0	70 0	21 0	846 0
Clérihew & Lascelles	670 18	89 7	42 15	803 0
Patman & Fotheringham	667 0	76 0	33 0	776 0
J. Porter	649 0	80 0	45 0	774 0
Batterbury	633 0	84 0	28 0	745 0
Roberts	600 0	69 10	30 0	699 10
Saunders	570 0	90 0	15 0	675 0
T. Richards*	555 0	76 15	25 10	657 5
Vokins & Hard	419 5	84 2	32 1	535 9

* Accepted.

N.B. The decision of the committee was received by the architect only last week.

TO CORRESPONDENTS.

J. B.—E. T. B.—T. I. S.—Rev. J. H. P. (extract is in type).—A Constant Reader.—A. Z. (seems a day after the fair with his remark as to the architect of the Manchester Assize Courts).—W. W.—M. M. C.—An Old Ironmonger (send us a specimen of the Circular).—W. M.—H. N. (we must decline questions between master and apprentice).—F. G. T.—G. J. S. (thanks).—J. R.—Mr. T.—G. G.—C. M.—F. R. W.—T. P. P.

☞ *NOTICE.—All Communications respecting Advertisements, Subscriptions, &c., should be addressed to "The Publisher of the Builder," No. 1, York-street, Covent-garden. All other Communications should be addressed to the "Editor," and* NOT *to the "Publisher."*

Post-office Orders and Remittances should be made payable to Mr. Morris R. Coleman.

ADVERTISEMENTS.

Just published, price 6d. or 1s. in boards,

MEMORIALS of WORKERS: the Past to encourage the Present.
By GEORGE GODWIN,
Author of "Town Swamps and Social Bridges," &c.

"'Memorials of Workers' is a meritorious address, intended by the author expressly to encourage every man who is toiling to improve himself, and to benefit others."—*Leader.*

"Mr. Godwin's little volume, small as it is, will worthily take its place in that class of practical literature to which it belongs."—*Illustrated News.*

"It was a worthy object the lecturer had in view, and his lecture will serve effectually to promote it. We heartily wish it an extensive circulation."—*Literary Gazette.*

"Much information is embodied in a very narrow compass."—*Critic.*

"A book like this put into the hands of a youth with any aspiring impulses could not fail to do good: its influence on any reader would be an elevating one,—a great thing."—*Chatham News.*

"This printed lecture should be read and thought over in the home of every peasant and artizan in Great Britain."—*Art-Journal.*

"This is exactly the thing to distribute in workshops and schools."—*Ecclesiologist.*

London: HARDWICKE, Piccadilly; and at the Office of "The Builder," 1, York-street

PLANS, WORKING DRAWINGS, SPECIFICATIONS, &c. &c. PREPARED (or copied) for the PROFESSION; or occasional assistance rendered; by Mr. WILLIAM MARSHALL, Architect and Surveyor, 5, Chancery-lane, W.C.

MR. T. Y. KIMPTON, ARCHITECT and SURVEYOR, 2, Adam's-court, Old Broad-street, London, E.C.
Disputed accounts speedily adjusted.
Artificers' works measured and valued.
Estates surveyed and mapped.
Designs, working and detail drawings, maps, plans, tracings, perspectives, and professional aid generally.
Lithography, artistic and commercial, with despatch.

PERSPECTIVES and first-class DESIGNS carefully executed, in outline or colour, by Mr. S. A. MATTHEWS, Architect, 10, Gray's-inn-place, Gray's-inn, W.C.

AN ARCHITECT having a safe and highly respectable practice in a provincial town, is desirous of taking a PARTNER to assist him.—For terms, &c. address R. H. D. Office of The Builder."

TO BRICKMAKERS AND OTHERS.

WANTED, a PARTNER, with 1,500*l.* to 2,000*l.* capital, to take the management of an extensive Brick and Tile Manufactory, which is in full and profitable operation.—Address, C. W. care of A. J. Isaac, Stationer, 56, Bishopsgate-street Within.

TO BRICKMAKERS.—PARTNERSHIP. A Gentleman with capital would like to join some Brickmaker who is already working a well-established brickfield on the Thames or Medway, and who may wish to extend his trade.—Address, X. Jamaica Coffee House, Cornhill.

TO PARENTS AND GUARDIANS.

ARCHITECTURAL PUPIL.—The Senior Partner in a Firm, practising and holding public appointments in the Metropolis, has a VACANCY in his Office for an OUT-DOOR or IN-DOOR PUPIL.—For terms, &c. address L. M. Messrs. BUCK and WOOTTON, Stationers, Westminster-road, S.

A LAND AGENT and SURVEYOR, of extensive connections, having in hand some large Surveys and Valuations, is willing to receive an OUTDOOR PUPIL. A premium will be required. The opportunity for information and improvement very good.—Address, No. 345, Office of "The Builder."

CLERK of the WORKS required immediately, for a CEMETERY.—Apply to Messrs. POULTON & WOODMAN, Reading.

CONSTANT EMPLOYMENT for a handy THREE-BRANCH HAND at JOBBING.—Apply to H. G. EVANS, 11, Camomile street, Bishopsgate-street, City, E.C.

TO DRAUGHTSMEN AND CLERKS OF WORKS.

DRAUGHTSMEN with good knowledge of Construction and Italian Detail are REQUIRED in a London Office. A CLERK of WORKS, under 35 years of age, is also REQUIRED. Terms, 3*l.* a week.—Address, by letter only, with references, &c. to S. K. Messrs. Street, Brothers, 11, Serle-street, Lincoln's-inn, W.C.

TO PARENTS AND GUARDIANS.

PUPIL WANTED, by W. FRANCIS, Artistic, Mechanical, and Commercial Lithographer, 12, Gray's-inn-terrace, W.C.

SHOP FOREMAN WANTED, to take the management of about thirty JOINERS.—Address, A. Z. prepaid, to the Office of "The Builder," stating age, wages required, and how long engaged with last employer.

TO CLERKS OF WORKS.

TWO competent CLERKS of WORKS required, accustomed to Gothic work.—Address, J. C. 13, Stratford-place, W.

WANTED, by a Contractor and Builder, an ASSISTANT. He must be a good draughtsman, and thoroughly qualified to measure up brick and stone bridges, all kinds of earthworks, and buildings generally.—Address, stating every particular as to recent employment, with whom engaged, salary required, and age, to X. 25, High-street, Shrewsbury.

TO CARPENTERS AND JOINERS.

WANTED, several quick and experienced HANDS. None need apply who do not feel themselves qualified to execute first-rate work.—Apply to Mr. WHITMAN, 12, Belgrave-terrace, High-road, Lee.

TO GRAINERS AND WRITERS.

WANTED, immediately, a good WORKMAN in the above business, for a constancy. Wages 30s. per week.—Address, C. J. LEA, High-street, Lutterworth.

TO CARPENTERS AND JOINERS.

WANTED, in a small Jobbing Shop, where two or three others are kept, a Confidential Non-Society Man, from 30 to 35 years of age, as WORKING FOREMAN. He must be a good Joiner, and have no objection to out-doors or jobbing. Wages 5s. 6d.—Address, J. P. Money Order Office, Hoxton.—Good references required.

TO BRICKMAKERS.

WANTED, a thoroughly competent Person as FOREMAN in a BRICK and TILE YARD in the country, who is willing to make the goods at piecework if required.—Testimonials to be sent to X. Y. Z. Post-office, Deptford, Kent.

WANTED, for a few months, a CLERK of the WORKS, to superintend a BUILDING, about 18 miles from London. Good references will be required. 2*l.* per week.—Apply by letter, post-paid, stating age, and where last employed, to N. A. B. 9, Buckingham-street, Strand.

WANTED, an experienced SHOP FOREMAN.—Address, with full particulars, to A. H. D. Holmes's Library, 39, Hampstead-road, N.W.

WANTED, immediately, in a Builder's Office, a Person thoroughly acquainted with the general routine of the same. It is of the greatest importance he be a first-rate accountant, well versed in prime-cost prices, estimating, and measuring. Unexceptionable references will be expected.—Letters, in applicant's own handwriting, stating age and salary required, to be addressed to Z. A. Z. Office of "The Builder."

WANTED, a respectable, well-educated YOUTH, as an IN-DOOR APPRENTICE to the Carpentering and Building Trade.—Apply to H. G. EVANS, 11, Camomile-street, Bishopsgate-street, City, E.C.

TO DRAUGHTSMEN.

WANTED, an expeditious First-class DRAUGHTSMAN, to MAKE MAPS of Town and Country.—Apply, by letter, to Messrs. WATERLOW & SONS, No. 65 to 68, London-wall, London, E.C.

TO BUILDERS' FOREMEN.

WANTED, an experienced SHOP and general FOREMAN. He must be fully competent to set out all descriptions of joiner's and other work, and have a general knowledge of working drawings. None need apply who have not filled a similar situation.—Address, stating age, wages, and reference, to Messrs. ADEY & SON, Builders, Newbury.

TO CARPENTERS, BUILDERS, AND CONTRACTORS.

WANTED, EMPLOYMENT, by a very steady, active Young Man, aged 23, a joiner and carpenter by trade. Being a first-rate scholar, would accept a situation as TIMEKEEPER, &c. Wages not so much an object.—Address, H. L. No. 1, Carlton-road South, Mile-end.

TO MASONS, BUILDERS, AND STONE MERCHANTS.

WANTED, an ENGAGEMENT as MASON'S FOREMAN, or MANAGER and SALESMAN to a STONE MERCHANT. The Advertiser is experienced, and well acquainted with every description of stone and marble work. Aged 38. Testimonials and references of the highest order.—Address, A. W. care of James Larking, Boundary-street, Erith, Kent.

TO BUILDERS, &c.

WANTED, by a thoroughly practical general FOREMAN, out-door, a RE-ENGAGEMENT. Good references.—Address, B. B. 127, Bayham-street, Camden-town, N.W.

WANTED, by a YOUNG MAN, 24 years of age, the son of a Builder in the country, a SITUATION as ASSISTANT to a Builder or Railway Contractor. Drawings well understood, and much assistance could be rendered in estimating, &c. A Situation in the North Midland Counties preferred.—Address, B. N. Office of "The Builder."

TO BUILDERS AND PLUMBERS.

WANTED, by a Young Man, EMPLOYMENT in the above line. No objection to the country.—Apply to J. B. No. 5, Burton-street, Burton-crescent.

WANTED, an ENGAGEMENT, to SUPERINTEND a large SAWING, PLANING, and MOULDING MILLS, &c. with or without timber and deal yard, by a person thoroughly acquainted with all its branches, and willing to make himself generally useful. Unquestionable references. No objection to go abroad.—Address, R. T. Office of "The Builder."

TO PLUMBERS AND BUILDERS.

WANTED, a SITUATION, by a first-class PLUMBER, who understands his trade. Good reference.—Address, Q. R. Office of "The Builder."

TO BUILDERS AND SURVEYORS, &c.

WANTED, to ARTICLE a YOUTH, aged 16 years, to a respectable party, carrying on the above profession in the country, where he would have an opportunity of gaining a knowledge of practical building, in addition to the professional business, and be kindly treated.—Apply, stating particulars, amount of premium required, &c. to A. B. Post-office, Farnham, near Wickham Market.

TO MASTER BUILDERS AND OTHERS.

WANTED, a SITUATION as MILL SAWYER. Good reference. No objection to fill up time at anything else. Wages not so much an object as a constant place. Town or country.—Address, J. M. 16, Princes-street, Edgware-road, London, W.

TO BUILDERS.

WANTED, by a practical Man, a SITUATION as OUT-DOOR FOREMAN, or to take charge of a job. Can make working drawings, and measure up work.—Address, R. M. Mr. Gabes, Zinc Works, 67, Westminster-bridge-road, Lambeth, S.

TO ARCHITECTS AND SURVEYORS.

WANTED, a RE-ENGAGEMENT, by a Young Man, as JUNIOR ASSISTANT. He is a neat draughtsman, can abstract, understands book-keeping, is good at figures in estimating, &c. and has had good practice in land surveying. Good references.—Address, Y. Z. Post-office, Lymington, Hants.

TO PLUMBERS, &c.

WANTED, by a Young Man just out of his time, a SITUATION as PLUMBER and GLAZIER.—Address, K. C. H. Mr. Vasey's, 9, College-street North, N.W.

TO PLUMBERS, BUILDERS, &c.

WANTED, by the Advertiser, aged 30, a constant SITUATION. Is a thorough three-branch hand. References if required.—Address, stating wages, to J. G. 19, Melton-street, Euston-square, N.W.

WANTED, by a GENTLEMAN, of practical experience, aged 31, an ENGAGEMENT, in an Architect's or Surveyor's Office, at the West-end. Is a good draughtsman, penman, and calculator. Salary, 35 shillings per week.—Address, prepaid, DETECTIVUS, Post-office, Alexander-street, Westbourne-park, W.

TO SAW-MILL PROPRIETORS, BUILDERS, AND OTHERS.

WANTED, a SITUATION, as MILL or YARD FOREMAN, by a respectable Man, aged 29. Has a thorough knowledge of machinery. Five years' character.—Address, A. B. S. 22, West-street, Neckinger-road, Bermondsey, S.E.

WANTED, by the Advertiser, a SITUATION as WORKING or MANAGING FOREMAN of SMITHS. Well acquainted with all the various branches, having had many years' experience.—Address, X. W. 12, Wilton-road, Pimlico.

TO ARCHITECTS, &c.

THE Advertiser (a good practical Designer, in business for himself), having spare time, will render ASSISTANCE to the PROFESSION in Preparing Designs, Working Drawings, Perspective, &c. at his own office; or would enter into an arrangement for giving his services a portion of each day.—Address, N. W. 121, Albany-street, Regent's-park, N.W.

TO BUILDERS.

THE Advertiser, a practical Man, about commencing business under favourable circumstances, in a populous district in the Midland Counties, is desirous of meeting with a respectable PERSON having a good knowledge of the trade, who can advance the sum of 200*l.* to join him as PARTNER, for the purpose of attending to the books and general in-door management. The most satisfactory references given and required.—Applications addressed to J. L. Office of "The Builder," will meet with prompt attention.

TO ARCHITECTS, SURVEYORS, &c.

THE Advertiser desires an ENGAGEMENT. Is a neat and expeditious draughtsman, and understands perspective. Good reference. No objection to the country.—Address, H. 44, Regent-street, Vincent-square, S.W.

TO ARCHITECTS AND SURVEYORS.

THE Advertiser has served his Articles, and is desirous of an ENGAGEMENT as IMPROVER or Draughtsman. Good references. Salary a secondary consideration.—Address, W. G. Post-office, Tunbridge Wells.

TO CEMENT MERCHANTS.

THE Advertiser, having a thorough practical knowledge of plastic Materials, is desirous to ENGAGE with a Plaster and Cement Manufacturer, as TRAVELLER or otherwise. No objection to go abroad. The most satisfactory testimonials can be given.—Address, N. H. 113, York-road, Lambeth, S.

TO BUILDERS AND CONTRACTORS.

THE Advertiser, aged 21, well acquainted with the Building Trade, is in want of a SITUATION as CLERK or TIMEKEEPER.—Address, F. A. Stracey's Library, Hanover-place, N.W.

TO ARCHITECTS, &c.

THE Advertiser is open to a SITUATION as DRAUGHTSMAN.—Address, B. B. Office of "The Builder."

SEWERS and DRAINAGE.—A thoroughly competent CLERK of WORKS, with first-class testimonials, wants an ENGAGEMENT. Has served under several of the most eminent surveyors and engineers of sewers and drainage works, and from each of whom he offers a testimonial of his ability and character. No objection to a country engagement.—Address, W. S. No. 2, King's-terrace, Commercial-road East, Stepney, London, E.

TO MASTER BRICKMAKERS.

A YOUNG MAN seeks a RE-ENGAGEMENT in the COUNTING-HOUSE or FIELD. Unexceptionable references.—Address, A. B. L. No. 13, John-street, Stoke Newington, N.

TO ARCHITECTS AND BUILDERS.

A CLERK of WORKS, well acquainted with his duties, seeks an ENGAGEMENT as such, or to manage a Building Business, for which he is well qualified. References unexceptionable.—Address, Mr. THOMAS, 10, Princes-street, Stamford-street, London, S.

TO BUILDERS AND OTHERS.

A PRACTICAL FOREMAN of CARPENTERS and JOINERS is open to an ENGAGEMENT, in town or country.—References from late employer.—Address, K. G. Office of "The Builder."

TO ARCHITECTS, &c.

A CLERK of WORKS, a thoroughly practical man, competent to prepare complete sets of architectural drawings, and is well versed in construction, is open to a RE-ENGAGEMENT as Clerk of Works, or General Foreman, or as General Superintendent on an Estate.—Address, ALPHA, 4, Carthusian-street, Charterhouse-square, City.

N.B.—Unexceptionable testimonials.

TO ARCHITECTS.

A GENTLEMAN residing in the country, and belonging to the Profession, would be glad to devote a portion of his leisure time in assisting architects to get out competition and working drawings. Terms moderate.—Address, A.B. Mr. Bridge, Stationer and Printer, Maldon, Essex.

TO PLUMBERS, PAINTERS, AND GLAZIERS.

A YOUNG MAN, aged 20, of respectable connection, who has been five years at a large establishment in a provincial city, wishes to bind himself for two years as an IMPROVER (in-doors preferred). Has been accustomed to the Graining, and is willing to make himself generally useful. Town or Country.—Address, T. B. G. Mr. J. King's, Wisbeach-road, King's Lynn.

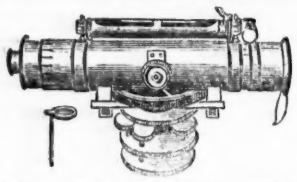
T SQUARES.—W. F. STANLEY, late STANLEY and ROBINSON'S IMPROVED. Recommended in "The Engineer," "Builder," and "Practical Mechanics' Journal." 42-inch, 5s. and 7s. 6d.; 31-inch, 3s. 6d. and 5s. 6d.; 23-inch, 2s. 6d. and 4s.

Isogon Squares, for Taking and Reversing Angles; Improved Architects' Scales, 12-inch box, 2s. 9d.; ivory, 8s.

Improved Architects' Drawing Boards.

Improved Architects' Drawing Instruments.

MANUFACTORY,
3, GREAT TURNSTILE, HOLBORN,
LONDON. W.C.



THEODOLITES, LEVELS, CIRCUMFERENTERS, MATHEMATICAL DRAWING INSTRUMENTS, SCALES, TAPES, CHAINS, T-SQUARES, RULES, &c.

JOHN ARCHBUTT,
20, WESTMINSTER BRIDGE ROAD, LAMBETH,
Near Astley's Theatre,

Respectfully informs the public that his Illustrated Price-List will be forwarded free on application. The prices will be found remarkably low. Every article warranted. Second-hand instruments of all kinds, by the best makers, always in stock.

TO ARCHITECTS, ENGINEERS, AND SHIPBUILDERS.

PATENT WOOD, or FIBROUS SLAB.
DAMP PREVENTED, FIRE RESISTED.
DECORATION PROMOTED, and EXCESSIVE HEAT SUBDUED.

All the COMFORT, ECONOMY, and SECURITY incident to these considerations are to be obtained by the use of the PATENT FIBROUS SLAB, in the lining, flooring, ceiling, and decoration of public buildings and dwellings of every class, however newly erected; as well as in the entire construction of all kinds of both permanent and temporary buildings; also to the lining of IRON SHIPS, so that the usual effect of the damp which in all cases arises from the iron skin, may be "prevented," and the excessive heat from engine spaced bulkheads "subdued."

For samples, circulars, and all other particulars, apply at the Office, 15, Wellington-street North, Strand, London, W.C.

NO SHUTTER BARS.

JENNINGS'S SHOP SHUTTER-SHOE.

SHOP SHUTTERS are SHOD and SECURED by the above, at HALF THE COST OF THE UNSIGHTLY AND DESTRUCTIVE SHUTTER-BAR. Shops referred to in every public street in London

When ordering the above, send FINISHED THICKNESS of Shutters, and the way they go up.

Sold by all Ironmongers, and the Inventor,
GEORGE JENNINGS,
Sanitary and Engineering Depôt, Holland-street, Blackfriars-road.

CARTS, VANS, WAGGONS, LADDERS, BARROWS, &c.

GEORGE ELL, Cart Wheelwright, Ladder, and Barrow Maker, has constantly on hand brick, dobbin, and other carts, spring vans; also a large stock of ladders, barrows, trestles steps, and other trade implements for builders, contractors, and decorators, on the most improved principles and low prices.

Scaffolding, Ladders, Barrows, Steps, Trestles, &c. Lent on Hire.

Price Lists on application to
G. ELL, 279 and 280, EUSTON-ROAD, N.W.
N.B. Removing to more extensive Premises, situate 368, Euston-road, N.W.

PATENT DOVETAILED LADDERS are far superior to any others made, the rounds being so well fixed to the sides without their splitting. Ladders so made may have new rounds put in the second time, and be as sound as when new.—For particulars apply to W. MARYON, 9, Stanhope-street, Hampstead-road, sole manufacturer.

LADDERS, STEPS, and TRESTLES, LENT on HIRE.

TO IRONMONGERS.—TO BE DISPOSED OF, an old-established BLACK and FURNISHING IRONMONGERY BUSINESS, in one of the best suburbs of London. Returns, about 3,000*l.* per annum; stock and fixtures, about 2,000*l.* The premises are in a commanding situation, very commodious, and arranged expressly for the trade. The business was established in 1785; and the connection, which is of the most respectable class, has been fully maintained to the present time. In the hands of one or two active men, the trade may be much extended.—Apply to Messrs. FULLER & HORSEY, Billiter-street, City, E.C.

TO PAINTERS, PLUMBERS, &c.—TO BE DISPOSED OF, for a small sum, a BUSINESS of seventeen years' standing; the present party having another business to attend to, situate in a good market town in Surrey.—Apply by letter to H. J. Messrs. Smith & Hill's, Raven-row, Mile-end-gate.

TO BUILDERS AND OTHERS.

TO BE DISPOSED OF, a good GENERAL BUILDING BUSINESS, in an improving market-town in Kent. The proprietor is about to enter a different line of business, which is his reason for disposing of the same.—For particulars apply, by letter only, to B. C. *Gazette* Office, Sittingbourne, Kent.

TO BUILDERS.—TO BE DISPOSED OF, within one hundred yards of the Fulham-road, the Proprietor, Mr. Bignell, retiring from ill health, an old-established BUSINESS in the Building Line, and Nine-roomed Dwelling-house, with an unexpired lease of ten years; most convenient premises attached.—Full particulars to be had on the Premises; of Mr. BIGNELL, 6, Norfolk-place, Marlborough-road, Chelsea.

TO INVENTORS.—The General Patent Company (Limited), 71, Fleet-street, E.C. undertakes to obtain PATENTS and REGISTRATIONS for INVENTIONS at most moderate charges. Unusual facilities afforded to Inventors. Printed information (gratis) on application to

ROBERT M. LATHAM, Secretary.

INVENTORS ASSISTED, in securing, carrying out, and disposing of their inventions.—Apply to Messrs. B BROWNE & CO. British and Foreign Patent Office, 52, King William-street, London-bridge. A pamphlet on the cost of patents (gratis).

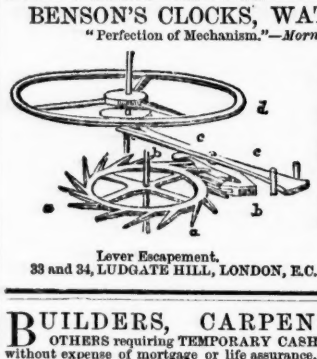
TO CHURCHWARDENS, BUILDERS, and OTHERS.—TO BE SOLD, cheap, a SECOND-HAND powerful CHURCH CLOCK. Strikes the hours and quarters. Capable of striking a bell from 12 cwt. to 20 cwt.—For particulars, apply to Mr. W. B. MAPPLEBECK, Churchwarden, Bull-ring, Birmingham.

FREDERICK DENT, Chronometer, Watch, and Clock Maker to the Queen and Prince Consort, and maker of the great clock for the Houses of Parliament, 61, Strand, and 34, Royal Exchange.

No connection with 33, Cockspur-street.

BENSON'S CLOCKS, WATCHES, &c.

"Perfection of Mechanism."—*Morning Post.*



Lever Escapement.

Gold Watches, 4 to 100 guineas.

Silver Watches, 2 to 50 guineas.

Send two stamps for Benson's Illustrated Watch Pamphlet.

Watches sent to any part of the Kingdom on receipt of a remittance.

33 and 34, LUDGATE HILL, LONDON, E.C. Established 1749.

BUILDERS, CARPENTERS, and OTHERS requiring TEMPORARY CASH ACCOMMODATION, without expense of mortgage or life assurance, are solicited to peruse the system of business adopted by the Finsbury Bank, 144, St. John-street-road, E.C. Established in 1838.—All communications and business transactions strictly confidential. Prospectuses forwarded.

IMMEDIATE CASH ADVANCES, MONEY ADVANCED on Warrants, Freehold, Leasehold, and Copyhold Property, Bills of Sale, and other approved securities; Balance Sheets prepared, Businesses disposed of, Partnerships negotiated, and all other matters connected with accountancy promptly attended to, by Mr. R. CROSSLEY, Accountant and Business Agent, 17, Moorgate-street, Bank, E.C. Country commissions executed. Personal interviews free of charge.

IMMEDIATE CASH ADVANCES.—Money Lent on Personal Security Leases, &c.

SUMS from 10*l.* to 300*l.* ADVANCED two or three days after application, for two years, one year, or six months (repayable by weekly, monthly, or quarterly instalments); and good Bills Discounted. Charges moderate, and strict confidence observed.—LONDON and PROVINCIAL LOAN COMPANY: Office, 69, Goswell-road, London. Open daily from NINE till SIX.—Forms of application and prospectus (gratis) on receipt of a stamped envelope. H. FLEAR, Manager.

WANTED, a good BOARD-ROOM TABLE, either in Wainscot, Oak, Mahogany, or Deal.—Address, stating size and price, to A. B. care of Messrs. Vacher and Sons, Parliament-street, S.W.

WINDOW BLINDS.
FULLER, BROTHERS,

MANUFACTURERS OF EVERY KIND OF INSIDE AND OUTSIDE WINDOW BLINDS,

Warranted of the best Materials and Workmanship, at the lowest possible Prices.

Builders and the Trade supplied.
45, HIGH-STREET, BOROUGH, S.E

DURABILITY of GUTTA PERCHA TUBING.—Many inquiries having been made as to the Durability of Gutta Percha Tubing, the Gutta Percha Company have pleasure in giving publicity to the following letter FROM SIR RAYMOND JARVIS, Bart. VENTNOR, ISLE of WIGHT.—Second Testimonial:—"March 10th, 1852.—In reply to your letter received this morning, respecting the Gutta Percha Tubing for Pump Service, I can state with much satisfaction, it answers perfectly. Many builders and other persons have lately examined it, and there is not the least apparent difference since the first laying down, now several years, and I am informed that it is to be adopted generally in the houses that are being erected here."

N.B. From this testimonial it will be seen that the CORROSIVE WATER of the ISLE of WIGHT has no effect on Gutta Percha Tubing.

THE GUTTA PERCHA COMPANY, PATENTEES,
18, WHARF-ROAD, CITY-ROAD, LONDON.

SAW-MILLS, with Timber-Yard and Wharf, TO BE SOLD or LET, on lease, on the banks of the Thames, above bridge, with 15 feet depth of water at high tide. The machinery is all modern, and of the first class, principally by Messrs. Easton & Amos, including a double cylinder steam beam-engine, of 25-horse power, with flue boiler; a timber frame, a deep plank frame, three deal frames (two by Parsons); self-acting saw bench, large cast-iron tank, overhead and wharf cranes, a convenient dwelling-house, and offices, spacious timber-yard, with piling stages, and excellent wharf.—Apply to Messrs. FULLER & HORSEY, Billiter-street, E.C.

WIMBLEDON.—FREEHOLD LAND.—TO BE SOLD, several PLOTS, situate on an eminence, about ten minutes' walk from the Railway station, adapted for the erection of detached or semi-detached residences, on a dry gravelly soil well drained.—For terms, apply to Mr. DANIEL MASON, Land and Estate Agent, Wimbledon.

LAND for BUILDING, in the City, Coleman-street, near the Bank of England.—TO BE LET, on a Building Lease, for a term of 84 years, a highly eligible PLOT of LAND, containing an area of about 6,000 feet, situate in White Horse-yard, on the west side of Coleman-street, the property of the parish of St. Stephen, Coleman-street. A plan of the site may be seen on application at the Offices of Mr. THOMAS JONES, Solicitor, No. 1, King's Arms-yard, Coleman-street; or at the Offices of Mr. JOHN GRIFFITH, Architect, No. 16, Finsbury-place, South Finsbury.—Tenders for the above are to be delivered at the Offices of Mr. JONES, on or before the 19th day of APRIL next.—N.B. The Feoffees of the Parish do not bind themselves to accept either the lowest or any Tender.

PATENT RIDGE TRESTLE. This Trestle, which will be found highly important to builders and others, who have to perform works and repairs on ridges of buildings, constitutes either a stage for a workman to stand upon, or for supporting scaffolding.

For particulars, apply to Mr. WILKINS, Builder, Banbury, Oxon, Patentee.

AUSTIN'S IMPERIAL.

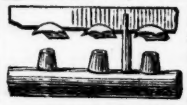
PATENT SASH and BLIND LINE can be obtained of all ROPEMAKERS, IRONMONGERS, MERCHANTS, FACTORS, and WHOLESALE HOUSES in TOWN or COUNTRY. Established 1774.

PATENT WROUGHT-IRON WINDOWS, manufactured by the GENERAL IRON FOUNDRY COMPANY (Limited). HENRY ROGERS, Manager. Lyon's Wharf, and No. 43, Upper Thames-street, London. These windows combine the advantages of great strength with lightness and cheapness, and they have been very highly approved by many of the most eminent architects of the day. They are peculiarly well adapted for factories, railway stations, prisons, and lunatic asylums, and also for exportation, as it is impossible to break them by fair means. Lists of prices can be had on application.

"ALLEN'S" PATENT SMOKE-CONSUMING APPARATUS and REGULATING VALVE.—This valve is the simplest and cheapest of all the inventions yet introduced, for the purpose of effecting more perfect combustion of fuel, in all kinds of furnaces. Testimonials, of the highest possible character, are gladly given by the parties who have them in operation.—Price, No. 1, 3*l.* 3*s.*; No. 2, 3*l.* 10*s.* for furnace-door complete with the Patent Valve.

H. ROGERS'S REGISTERED SEWER, STABLE, and DRAIN-TRAP.—The cheapest and most effective Trap yet introduced. A great number of these traps are fixed in various Government and private establishments, and having had a fair trial, have met with unqualified approval. These articles may be had of all Ironmongers, and of the General Iron Foundry Company (Limited), 43, Upper Thames-street, Makers of Gas and Water Pipes, Hot-water Pipes and Connections, Chemical and Soap-pans, Furnace-bars, and all other kinds of Castings, for manufacturing and building purposes.

IMPROVED PATENT GAS-COOKING APPARATUS, for economy and cleanliness, such as has not previously been brought before the public. See accompanying sketch, showing the jets under an iron shell, which, after having been lighted a few moments, becomes red hot, thereby destroying soot, and creating a great heat for cooking chops, roasting meat, or for heating counting-houses and other places.



SAMUEL HARRISON, 52, STANHOPE-STREET, CLARE-MARKET, W.C.

IRON BUILDINGS and CORRUGATED IRON ROOFING.—Iron Bridges, Girders, Railway Tools, Bolts and Nuts, Iron Fencing, Iron Churches, Warehouses, Villa Residences, Theatres, and every description of Portable Iron Buildings, adapted to all climates, packed and shipped complete. Experienced workmen sent to all parts of the world.

For Designs and Estimates apply to
HEMMING & CO. 23, Moorgate-street, E.C.

MOREWOOD & CO. (late Morewood & Rogers), Dowgate Dock, Upper Thames-street, London: and Baskerville Works, Birmingham.

PATENT GALVANIZED TINNED IRON AND TILES, GALVANIZED IRON, PLAIN or CORRUGATED, and CURVED, of all Gauges. Also, BLACK or PAINTED CORRUGATED IRON, GALVANIZED or BLACK CAST GUTTERS, PIPE, &c. All kept in Stock. Also, Galvanized Water and Gas Tubing, Stamped and Moulded Gutters, Wire, Wire Netting, Nails, Rivets, Pails, &c.

Estimates given for Roofs, and every description of Galvanized Buildings, at the OFFICES and WAREHOUSE, DOWGATE DOCK, LONDON.

WROUGHT-IRON TANKS, CISTERNS, GIRDERS, FUNNELS, &c. plain or galvanized; CATTLE-TROUGHS, IRON CART-BODIES, &c.
BURNEY & BELLAMY, Mill-wall, London, E.

BATHS and HOT-WATER APPARATUS.
J. TYLOR & SONS'
ILLUSTRATED CATALOGUE OF BATH WORK, &c.
to be had on application.
Estimates and Plans for fixing given.
J. TYLOR & SONS, Manufacturers, Warwick-lane, Newgate-street, London.

LONG WANTED.
TO OVEN BUILDERS, BAKERS, AND OTHERS.

THE ASHFORD ECONOMY of HEAT COMPANY,

Having invented and patented a new and valuable CONSTRUCTION of BAKERS' OVENS, whereby they can be heated with very much LESS FUEL, and RETAIN HEAT much longer, the wear of the oven much less, and the original cost not more than ordinary ovens.

The above Company now offer to grant licenses for any district upon very liberal terms.

For further particulars, apply to Mr. W. DUNGEY, Ironmonger Ashford, Kent, Secretary to the above Company.

TO BELL-HANGERS, GAS-FITTERS, IRONMONGERS, &c. &c.—The Trade supplied on the best terms with House-bells, Zinc Tube, and Copper Wire. Gas Pendants, Brackets, and Joints, of all descriptions for Gas-fitting, in Brass and Iron; Tin, Composition, Iron, and Brass Tubing; Cornice Poles Rings, and Lacquered Case-tube for Picture-rods, Desk-rails, &c. &c. Superior Rolled Brass, for Engravers, Castings in Fine and Common Brass, Gun Metal, &c. at

RICHARD EVERED'S Brass and Bell Foundry and Metal Warehouses, Nos. 10, 11, and 12, Charles-street, Long-acre, London.